

JANUARY 1993, VOLUME 1, NUMBER 1

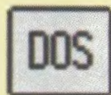
OS/2

PROFESSIONAL

DOS Users
Get Their
Just Desserts
With OS/2



☐ DOS Programs - Icon View



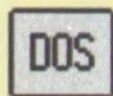
Harvard Graphics



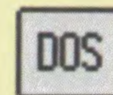
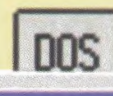
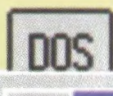
Quicken



Peachtree Accounting



CA-SuperCalc



Quattro Pro



OS/2 System

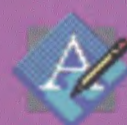


Master Help
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☐ Windows Programs - Icon View



PageMaker



Ami Professional



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WordPerfect

☐ OS/2 Programs - Icon View



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Accounting Vision/32



PC/Data Access
Control System



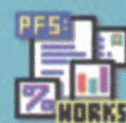
DeScribe



Enfin/3



ObjectVision



PFS: Works



Publisher's
Paintbrush

OS/2

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Start Here



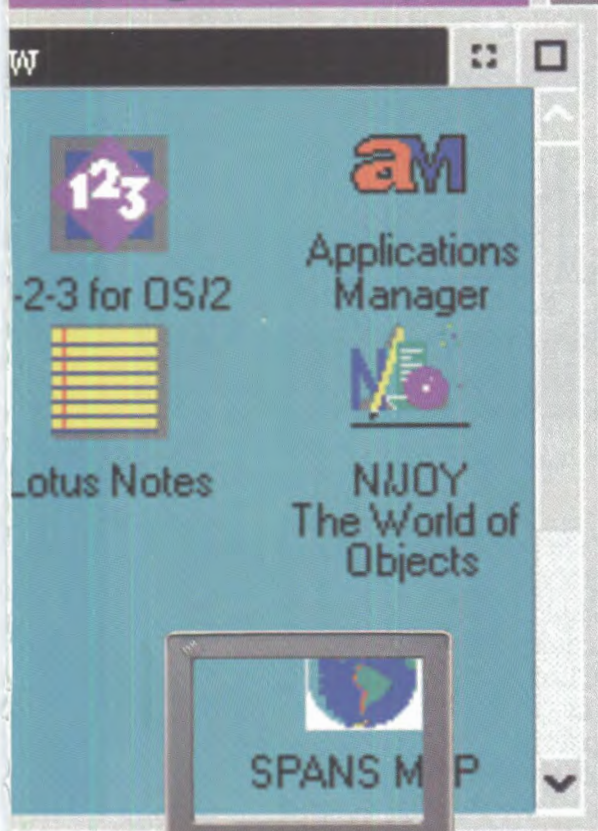
Information



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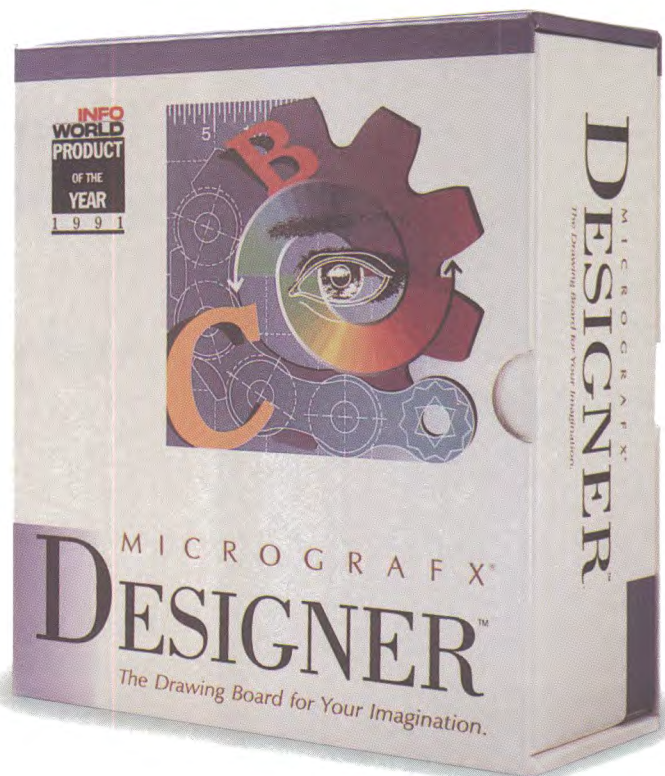
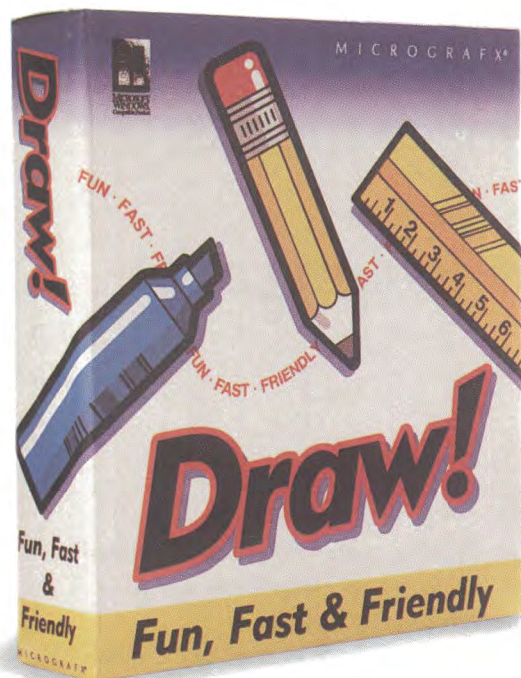
But maybe the best part is that for less than the cost of DOS and Windows, you get the capabilities of both. Plus all the added benefits of OS/2 2.0—including Adobe Type Manager®. So with OS/2 2.0, whatever applications you use, you've come to the right place. For an IBM authorized dealer near you, or to order OS/2 2.0 from IBM—for only \$99 for Windows and DOS users—call 1 800 3-IBM-OS2*.



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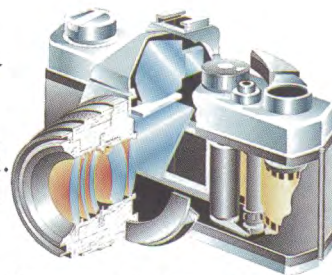


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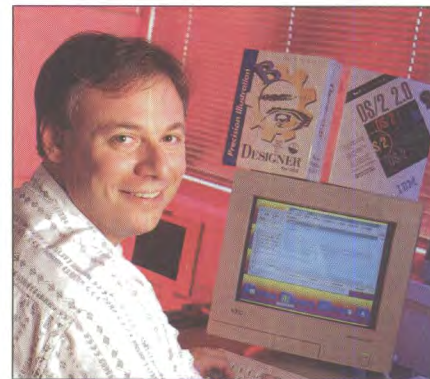
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Bring the Ease of a Mouse to the Power of a Mainframe

Introducing CM Mouse Support 1.4



Give PC "look and feel" to host applications

Now the speed and ease of a mouse can add to the power of host business applications without any change to the host system or programs. IBM CM Mouse Support* is an easy-to-use program that allows users of host applications such as IBM OfficeVision/VM to perform tasks simply by pointing and clicking with a mouse. The flexibility of CM Mouse allows the mouse to be used in place of the keyboard for almost all host interactions except text entry such as a document.

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With its unique screen recognition techniques, CM Mouse "hot spots" change instantly to give unique function for each host application menu. Instant access to an unlimited number of pop-up menus simplifies command selection, options, or keystrokes. CM Mouse can easily be configured to navigate through menu systems, automate logon sequences, simplify option selection and other functions.

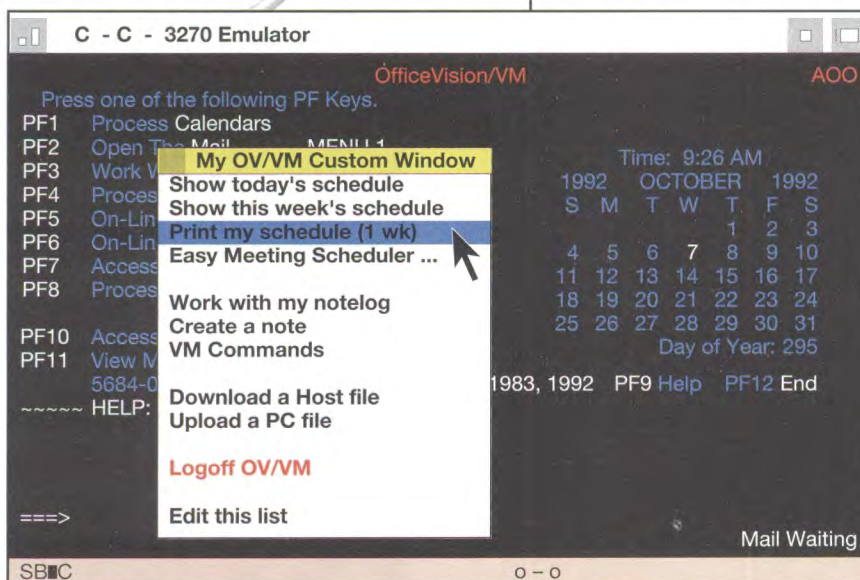
Multiplatform support

With support for OS/2,* Windows,** and DOS, CM Mouse provides the right solution to meet your needs. CM Mouse Version 1.4 supports the following environments and emulators:

Environment	Emulator
OS/2 Version 2	IBM Extended Services (Communications Manager) 3270 and 5250 emulators
OS/2 EE Version 1.3	Communications Manager (3270 and 5250)
Microsoft** Windows Version 3.0 or 3.1	IBM Personal Communications/3270 for Windows, Version 2 or 3
DOS (character mode)	IBM Personal Communications/3270 Full Function DOS, Version 3

* CM Mouse Support and OS/2 are trademarks of IBM Corp.

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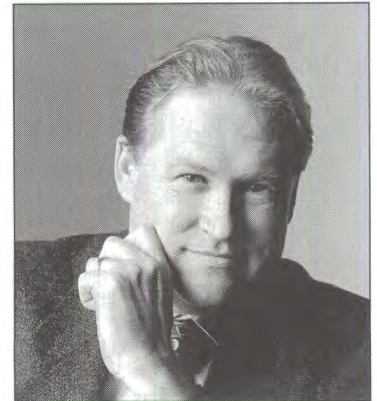
Discover some of the hidden gems of OS/2: the Productivity folder applets.

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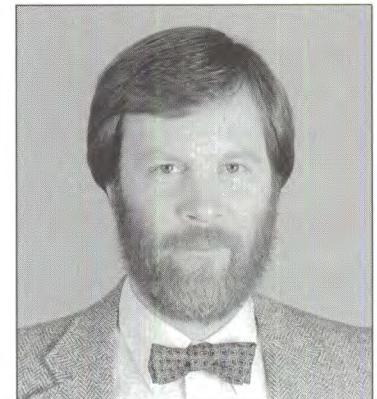
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As OS/2 proliferates, user complaints will increase. How the industry reacts is important.

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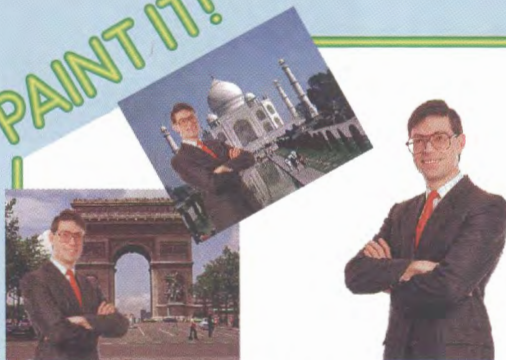
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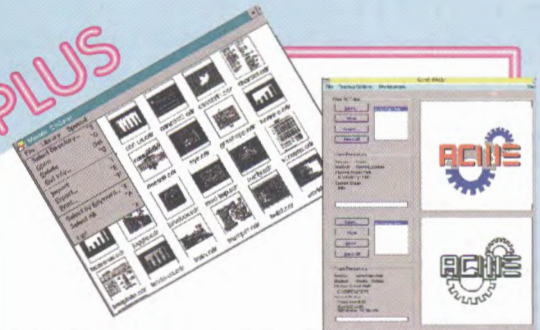
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OS/2 Professional is published bi-monthly and mailed to qualified OS/2 users by IF Computer Media, Inc. Send correspondence, and all requests for qualified subscription forms to *OS/2 Professional*, 6129 Executive Blvd., Rockville MD 20852, (301) 770-7302, FAX: (301) 770-7062.

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OS/2 Professional is published bi-monthly by IF Computer Media, Inc., 6129 Executive Blvd., Rockville, MD 20852. Application to mail at second-class postage rates is pending at Rockville, MD and additional mailing offices. Postmaster: Send address changes to *OS/2 Professional*, 6129 Executive Blvd., Rockville, MD 20852.

PUBLISHER'S MEMO

LISTEN CAREFULLY. That creaking sound is the window of opportunity opening for IBM and those who believe in the OS/2 operating system and the universality it represents. When Microsoft defaulted late last year on its bluffware, it set back the clocks of thousands of developers and millions of users. For IBM, it was an unlocking of the window of opportunity.

This year—the next two to four quarters—that window will be wide open. Not There will not be taken seriously anymore until it “is there.” The best minds we have talked with—as of press time—suggest that short of a version one point uh-oh, Microsoft may be forced into a Q4 rollout, perhaps even Q1 of 1994. The world's developers, the 486 buyers, and the ready-to-multitask multitudes will not wait.

These next few quarters, then, will be Big Blue's chance to marshal the forces of inter-cooperation and attach boosters to OS/2. Market entry and market proliferation will be everything. Unfortunately, that window is unstable and unforgiving if it isn't taken seriously. And IBM knows it.

But the question is can the new IBM energize and mobilize to meet the challenge. Boxes of funky tiger-faced T-shirts, emblazoned banners and a positive mental attitude is not going to make it happen. A coordinated, taut-muscled, quick-willed attack will.

IBM has the right head on its shoulders. The sharp-sensed eyes and ears of its newly defined leadership has the program figured out. They know that an operating system without applications is just an operating intention. They know that user proliferation requires intense marketing, advertising, publicity and general promotion. They know that six- and ultimately seven-digit monthly sales require a heads-up global retail net. They know that the technology lever must be continuously pushed and meshed. That is indeed the OS/2 game plan: mobile computing, pen computing, multimedia, rightsizing to the AS/400 and ultimate universality with other systems until the next century approaches.

But while IBM's head, eyes and ears may be screwed on right, its appendages are still weak. The great IBM body is blue and also brittle from years of atrophy and disuse. The neck bone is connected to the spine bone, but the leg bone and the hip bone ain't necessarily in sync. That's understandable. IBM, after all, is so massive an entity, and so desperate to redefine (and in essence reincarnate), it faces constant internal inconsistencies and rebellions as the old ways fall slowly and the new ways encroach. The distance between IBM's brain and its fingertips is so vast, it takes a long time for word to travel the distance. In an era when market response is sometimes measured in hours, that can be an intolerable physical condition. IBM knows this too and even as we speak is pumping up.

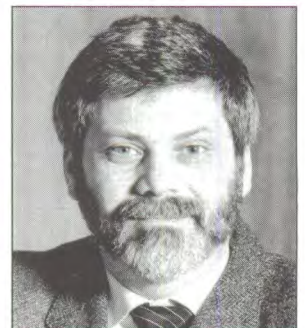
“Act now, ask later” is the new motto of the movers, shakers and risk takers. IBM knows that what it fears from Microsoft is not a superior operating system, but a superior marketing organization. For heaven's sake: give Bill Gates and his gang their due. This whole market ruckus is about an untested OS that doesn't even exist yet. Compare that to the speak not, risk not mentality that governs IBM promo. For sure, Big Blue's low profile must transform into something closer to the tiger on the T-shirts if OS/2 is to succeed.

The race for the hearts and drives of the world is not a simple, good natured competition between Bluey and Billy. What's at stake is the shape and vitality of the next generation of computing.

We here at *OS/2 Professional* are positioned at the tip of the blade as the battle is joined.

As such, we have been overwhelmed and gratified by the support readers and OS/2 users around the world have given us. This, our second issue, is a third larger in revenue, ad pages, total size and controlled circulation. Of our 100,000 circulation, we're mailing to 85,000 registered OS/2 users; distributing 8,000 at the January Windows and OS/2 Conference; and finally 1,500 at the OS/2 Technical Interchange February 28, where we will be sponsoring a breakfast for more than 1,000 OS/2 users. Stick with us. And enjoy this issue. See you in Phoenix.

Edwin Black



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Circle #15

INPUT

Comments, criticisms and observations

Congratulations and more

What a nice surprise. A new OS/2 magazine showed up on my desk this morning. Its arrival was as unexpected as the landing of a stealth aircraft. Why you guys decided to keep its creation such a secret is beyond me. But I'll get over it.

Its content is good, the reviews are highly useful and it even had a picture of Jim Gilliland so I can put a face with the messages. I am especially ecstatic about the advertisement for a OS/2-based music sampling system [from Digivox]. Too many people I deal with constantly explain that Windows is the only native platform that is supported for musicians. Now, I know it's not true.

OS/2 Professional is an excellent magazine, even with the odd inclusion of the travel bit about Vegas. And I'm sure there are other stranger bits lurking somewhere between the covers.

Good luck, it's a fine start.

Terry Fry
Merrifield, VA

Congratulations on the introductory issue of *OS/2 Professional*. It is indeed rare to see the first issue of a new publication exhibit such a high level of quality in both content and production. I am certain that *OS/2 Professional* will prove to be a resounding success. I look forward to future issues of *OS/2 Professional*.

Richard E. Hodges
University of California
Los Angeles, CA

I just received my initial copy of *OS/2 Pro*. Wow! What a refreshing computer magazine. Congratulations on putting together such a useful and entertaining collection of information.

I especially enjoyed the Dot EXE reviews of Describe 4.0 and C Set/2. These couldn't have come at a better time for me. I was just playing with the Describe Demo from ftp-os2 and the C Set/2 Beta from the DAP CD this afternoon. Then, when I sat down and read

your magazine this evening, I couldn't believe how much information I got from it.

I immediately scoured the magazine for the usual subscription card, but couldn't find it.

Congratulations on starting your new magazine. I look forward to future issues.

Jay K. Joiner
Edina, MN

[Editor's Note: Readers can subscribe by filling out the card bound into this magazine, or downloading OS2PRO.ZIP from file area 15 of the Compuserve OS/2 User Forum (go os2user).]

My compliments to you and your colleagues for a well-produced, easy-to-read magazine, filling a much-needed void in the computer press in general and OS/2 specific publications in particular. Your notion of the OS/2 "workstyle" and the consequent OS/2 "lifestyle" have been apparent for some time to many developers like myself chained to the compile-link-edit cycle. Thank you for taking that message to the user community in such an eloquent and convincing fashion by Edwin Black in the Special Report.

OS/2 has become the first operating system to use the current generation of processors and stays poised to take on the future hardware generation. It is my hope that OS/2 will make every user a "power user" and *OS/2 Professional* will help users to get there sooner.

All but one of the articles were relevant to the cause. But Barbara Bezek's piece, "Computer Warfare" (Wargames), while interesting, had me puzzled. Perhaps too much of OS/2 between the covers is not a good thing?

Users need to know about three things. One, how can they achieve the OS/2 workstyle using today's applications. Two, how can they enhance this workstyle by demanding and getting

more powerful and flexible native 32-bit applications. And three, what the future brings to enable them to extend such workstyle by using upcoming technologies. Let *OS/2 Professional* be a beacon to provide some insight to these concerns.

My best wishes to you and your crew.

Gess Shankar
Knowledge Exchange
Redan, GA

Thanks a megabyte

Thank you for publishing *OS/2 Professional*. The material was refreshingly informative, and certainly more so than the increasingly slanted perspectives which *PC Magazine* seems determined to deliver. Articles by Edwin Black and William Zachmann were particularly appreciated, and the information in Tips & Techniques, while elementary, was genuinely useful. I look forward to future issues.

Michael S. Lundy, M.D.
Columbia, SC

Fighting for OS/2

In an article, *Forbes* magazine interviewed Bill Gates and Bill said OS/2 is dead and his company effective January 1, 1993, will no longer give IBM any Windows code for OS/2. If so, what does that mean to us who use Windows programs in OS/2? Will we see Windows 3.1 and Windows 3.x-4.x support? Why doesn't IBM say anything? Where is IBM? It's time for them to fight for equal press.

Salvatore C. Purpura Jr.
Quincy, MA

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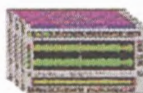
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Circle #8

BYTES & PIECES

News and trivialities, important and obscure

Borland cuts staff 15 percent

Some 350 Borland International employees were glum just before Christmas as the software firm thinned its staff by 15 percent. Many other employees were less than gleeful with sudden reassignments to fill in the voids left by the reorganization. Chairman Philippe Kahn blamed himself and Microsoft, which introduced its \$99 Access database and slashed Foxpro to \$495.

No telling what will happen to the employee swimming pool slated for the company's new facility after management lost a bet with the development team that they could not finish Quattro Pro in six months. Nor do we know what's in store for the in-house aerobics instruction and the 24-hour gym. But Kahn has already conceded that his notion of corporate culture must change if Borland is to survive in the new environment. Borland hopes that its meaner, leaner profile will yield a tougher competitor that can stand up to Microsoft and a fast changing market.

Edwin Black

And whither OS/2?

According to sources, Borland is keeping its corporate eye on OS/2 sales—"hour by hour," one product manager assured. The firm will be ready to respond rapidly with new products when the market seems lucrative enough.

In developing its much-

delayed Paradox for Windows, Borland is building a library of tools that gives their products more operating system (and hardware) independence.

It is hoped this strategy will make the company more responsive to future advances in computer technology, as well as speeding OS/2 development. Decisions on new OS/2 products are not likely before mid-year. But if OS/2 sales really hit the million copy per month level, Borland should be ready to spring into action with new product lines, including Paradox.

Bradley Kliewer

Suppressed smiles at Personal Systems

It was a schizophrenic reaction to the news last month that IBM was laying off 25,000 employees and making deep cuts in its operations, including R&D. While many IBMers and industry watchers were jittery, others were confident and reassured.

What just about no one in the general media caught was that the dramatic financial woes were being borne by the hardware side of IBM, especially the mainframe business. Personal Systems—the realm of OS/2—is on a steep growth curve—and hiring.

Last fall, when IBM split into twin monoliths, it enacted a well-known corporate strategy of spinning off and insulating its most profitable business from its struggling-to-survive operation. That's how Penn

Central got well years ago. It severed its bankrupt railroad operation and diversified. The difference here is that while companies such as Penn Central used precious railroad assets to diversify into unrelated business, IBM is staying within the four walls of the computer industry. Undoubtedly, IBM will continue to resize as the market does. The question is whether Big Blue in the closing years of this decade will stay ahead of the curve or continue to wait too long to react.

Edwin Black

OS/2 Developer publishes "notebook"

OS/2 Developer, IBM's authoritative quarterly for system developers, will be publishing a compilation of articles in book form entitled, *OS/2 2.X Notebook*, through Van Nostrand Reinhold according to journal editor Dick Conklin. The book, due out in the next few weeks is expected to have more than 1,100 pages of articles and reviews from back issues dating to the fall of 1990. The \$34.95 volume will be available through bookstores or through the publisher's toll free line, (800) 842-3636.

Margaret Dutcher

Toll free rings true

Proof that IBM is cultivating a global market from the top down and the bottom up can be seen in their toll free order line. The 800 number was established last spring for low-end users and scored an imme-

diated success. By last COMDEX, more than 50,000 consumers had ordered OS/2 via telephone. Most of these were "one-sies and two-sies" an IBM official told *OS/2 Professional*. But some purchased as many as six copies, boosting the year-end total for the toll free well above the 75,000 mark.

Edwin Black

What's new—and been new—for OS/2?

Enhancements, fixes and betas are coming in rapid succession as this issue of *OS/2 Professional* goes to press. Here's a quick chronology of what's happened so far as well as what to expect in the near future:

December '91. The LA (Limited Availability) version of OS/2 2.0 began electronic delivery.

March '92. The GA (General Availability) version of OS/2 2.0 began electronic delivery. Shrink-wrapped shipments began in early April. Since then, a number of enhancements and fixes have shipped in response to a variety of problems. In August, IBM announced the 1,000,000th copy of OS/2 2.0 had been shipped.

September '92. IBM began delivery of a beta version of OS/2 2.x with WINOS/2 3.1. While not without problems, users report that WINOS/2 3.1 is much faster than WINOS/2 3.0a (the version that shipped with GA), and may be faster than Windows

BYTES & PIECES

3.1 itself. This beta program was scheduled to end on December 15, 1992. At about the same time, IBM cleared legal hurdles and began electronic distribution of IBMNEWS (Employee Written Software). To date, dozens of these free gems have trickled out onto the BBS (bulletin board) circuit.

October '92. IBM began electronic delivery of the 32-bit Service Pak (a.k.a. CSD 6055). This version delivered some fixes to GA, and new functionality in the form of a 32-bit GRE (Graphics Rendering Engine—honest!), in addition to SVGA drivers for Tseng ET4000-based video cards as well as the IBM 256C VGA card.

December '92. IBM is actively discussing a broad ongoing beta program for more thorough testing of OS/2 on a wider variety of systems and configurations. By end of 1992, electronic delivery is expected of a much larger set of fixes to GA, sans the 32-bit GRE. For users who don't require 32-bit GRE functionality or SVGA drivers for supported video adapters, this release was expected to be the most stable release yet. Before the New Year rang, electronic delivery was also expected for additional refinements to the 32-bit GRE, in addition to a beefed-up WINOS/2 3.1. This version is much faster than any version of WINOS/2 released to date. Beta testers

say it is able to run DOS programs from inside Windows applications running under WINOS/2, as well as enhanced mode Windows applications. The full suite of Windows 3.1 "applets" is also expected to be included.

1st Quarter, 1993. Early this month the two-millionth copy of OS/2 will have been shipped. A "manufacturing refresh" is also expected. In other words, the shrink-wrapped product sent into retail channels will be changed. The new name will be OS/2 2.1. IBM has indicated that OS/2 2.1 will contain full 32-bit functionality and also WINOS/2 3.1. Some insiders also speculate that some form of IBM's multimedia exten-

sions will also be included.

Just so you don't get too confused, there's also something called the "Pre-installed Version," nominally 2.01. This version differs from what you buy at Egghead, in that it contains something called a Welcome Folder and a Configuration Tools folder. Reportedly, IBM is undergoing internal debate about the wisdom of having so many different versions to support. Some users also expressed surprise to see what looks like special treatment for Big Blue hardware (shades of Old IBM). ♦

Herb Tyson

How much time do you waste searching for bugs?

Toolkit API calls usually work. So that you don't have to check every return code, Error Manager does. EM tells you which API failed, where it failed and why. EM can log all errors and your messages to a file, pipe or to our viewer. And, it optionally notifies your window procedure enabling centralized error processing.

Error Manager

32-bit
Version 2.0
for OS/2 2.X
\$225*

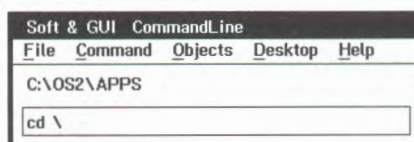
- Invaluable for Debug, QA Test and Production cycles.
- Finds intermittent errors without the Debug Kernel.
- Works with optimized code in realtime situations.

----- Session started on 11/2/92 at 4:11:14 -----
Programmer Message - This is my message 1
WinGetPS() generated error 1001 - Invalid window handle in file TEST.C at line 19.
DosRead() generated error 6 - Invalid handle in file TEST.C at line 21.
Programmer Message - This is my message 2

Include 1 header file.
Link 1 DLL.
Set 1 environment variable.

Includes a PM Viewer,
Pointer Validity API and a
Free copy of Command Line

How much searching for files, folders, objects and sessions?



32-bit
Version 2.0
for OS/2 2.0

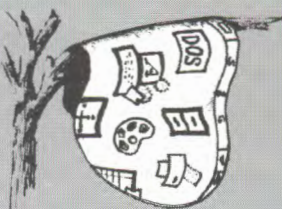
Command Line™

\$39⁹⁵*

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folder
diving!
Launch
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instantly!

Intelligent Application Launching with:

- Hotkey Application Start & Switch
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The OS/2 MANIFESTO

BY JOHN C. DVORAK

Thirteen ways IBM can make OS/2 a success.

1. RETHINK IT'S ADVERTISING. Let's face it, IBM advertising is too laid back or too wacky (the dancing elephant concept ads which dominate European marketing) to be effective. IBM should take a hint from the Apple folks and their recent ads which subtly ridicule Windows.

2. PUBLIC RELATIONS. Get some.

3. THE HORRID PRESS OFFICE. IBM has to get serious about correcting aberrations in its press office, especially overseas. People complain bitterly about these people, yet nothing is done. The press office in the UK, by ALL accounts, is horrid to the point that IBMers internally bitch about it as much as the media does. "They've done more harm than good," an IBM executive told me, "I can't figure out why they haven't all been fired. They must have connections." IBM's image will only be tarnished by the situation. OS/2 is going to be a dismal flop in Europe thanks to its own press office. Good work! Talking more recently with the broadcast media about U.S. press relations, I'm told that while the new PC Division seems responsive (which is obviously important to the OS/2 developers), the old corporate flacks still don't return phone calls on time nor show much enthusiasm. I'd put them on the list of 25,000 to be laid off.

4. MAKE A ONE-DISK EXECUTABLE SYSTEM. OS/2 needs a one disk minimal executable boot disk system that can be used in emergencies. One that can run on a minimal system with a usable Workplace Shell and is HPFS compatible. I think this was once called OS/2-lite. If the coders at IBM look at Geoworks and its capabilities running on an 8088, then they know

what's possible using assembly language. The minimal system should be sold with the full OS/2 system and sold separately for people who can get by with limited capabilities. Its main use would be for emergency access to the HPFS files. The programs that supposedly create such a disk don't work well.

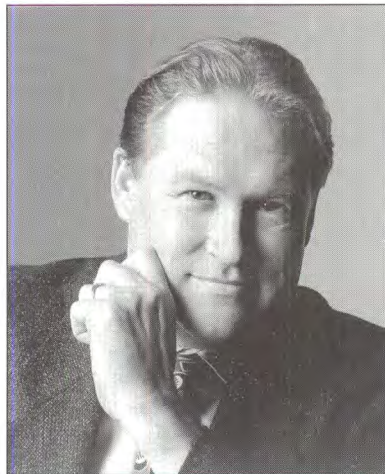
5. LIVEN UP THE DEFAULTS. Have you ever seen a demo of OS/2? Boring icons on big blank monochromatic backgrounds.

That's because these are the defaults! If someone uses yellow in the background they think it's risqué. How about a background showing Cindy Crawford naked? (Licensed, of course.) Now that would liven up the demo. While I doubt IBM would put nudies as the default, how about something other than a blank screen? You have no idea how many people think that OS/2 can't do wallpaper. IBM has no idea how many people prefer wallpaper to a blank screen. Even a picture of the IBM HQ in Armonk would be better than what they're providing as the default. And let's throw in a

few nifty icons too!

6. WORK WITH THE INDUSTRY TO UPDATE THE BIOS. These machines need a new BIOS! Any serious problems with OS/2 are because the 1983-based BIOS is archaic.

7. DON'T FALL INTO UPDATE TRAP. Let people work around known bugs. Don't get into an update frenzy. Updates mean changes and changes in the operating system mean changes for developers too. Also the system is so damn big that people don't want to update too often. There is no reason for unnecessary updates except to gouge the customer for update fees. People are getting sick of it.



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Circle #9

DVORAK'S VIEW

8. GO CRAZY FOR DEVELOPERS. Three ways: Support, support, support.

9. DON'T GO TOO CRAZY FOR DEVELOPERS. Avoid vertical market until horizontal markets are filled. Every time I ask about OS/2 development I hear about software for tunnel boring or for plastic surgeons. What about the basics first? Why wasn't every developer of plain-vanilla word processors contacted and convinced to port their stuff to OS/2 long ago?

10. BETTER PROMOTION OF MULTITASKING. The average user out there still argues that he doesn't need multitasking. Hey, I used to say the same thing. Obviously I was wrong and the average user is still wrong. Can we do something about this?

11. MOVE AWAY FROM CORNY MARKETING, BE MORE FUTURISTIC. I have nothing against Lee Reiswig and the Blue Ninja and his public demo of OS/2. Well, except for the fact that it is too laid back and not futuristic. Reiswig is too practical and, frankly, too "normal." IBM should go to a Quarter-deck demo and watch Gary Saxer do his high-energy shtick. In fact, IBM should just hire Gary Saxer to do its demos. He is the best in the business, period. You can't pay a guy like him enough money. Above all, IBM should promote the futuristic aspects of OS/2 and of the company in general with wild visionary demonstrations. Now that IBM has voice recognition working it could have a ton of fun impressing the rubes with space-age speculations and outrageous demonstrations. Instead, we see a low key, low energy theme. No wonder people suggest that IBM isn't serious about OS/2.

12. OUTSIDE HELP. Funny I should mention Gary Saxer. IBM should seriously think about bringing in some outside talent instead of retreading employees who have no familiarity with end-user mentality in the PC arena. There just seems to be one too many guys in positions of authority who haven't got a clue about the PC market. In fact you'd think they weren't really interested. Maybe a quiz would work. Ask employees if they can explain the following terms or companies: Apple, Gateway 2000, *PC Magazine*, Dvorak, GUI, SCSI, shareware, BBS and Carmen San Diego. If they can't tell you about each item, then they obviously don't care about the industry. Send them back to mainframes where they can take their chances with the future.

13. YOUR NAME HERE. You have to help IBM if you want this operating system to succeed. Get started. ♦

John C. Dvorak is a computer columnist for The San Francisco Examiner, PC Magazine, PC Computing, Microtimes and MacUser.

Windows—Competitor or Stepping Stone

Are Windows and OS/2 competitors? The obvious answer to that question seems to be, "Yes, of course they are!" After all, OS/2 and Windows represent radically different desktop operating system strategies from IBM and Microsoft. Are not the two locked into a fierce competitive struggle to define where we go from DOS? That depends on which two we have in mind.

There is no question that IBM and Microsoft are engaged in an intense struggle. That need not necessarily mean, however, that Windows and OS/2 must be viewed as mutually exclusive and incompatible alternatives.

Remember that Windows and OS/2 were not positioned against each other prior to 1991 when IBM and Microsoft were still cooperating with each other? Initially Windows was in fact positioned as a stepping stone toward OS/2. Prior to 1991, both Microsoft and IBM supported OS/2 as the successor to DOS. Windows was merely—as we say—a step along the way.

Sure, Microsoft put more emphasis on Windows than IBM did. Nevertheless, from the announcement of OS/2 in April 1987, until early 1991 both agreed that OS/2 was the ultimate destination. Both promoted OS/2 as the real answer to the need for a more powerful, 32-bit, fully preemptive, multitasking and multithreaded successor to DOS.

The change in the interface between Windows 1.X and Windows 2.X was made specifically to bring Windows into compliance with the common user interface (CUA) specification of IBM's Systems Application Architecture (SAA). Windows was to have been a bridge to OS/2.

Even in January 1991, when Microsoft first introduced the notion of NT and the WIN32 API at the Microsoft Systems Seminar held in Seattle, Washington, it was as part of what they presented as "OS/2 3.0." The NT ("new technology") kernel was claimed to be the foundation of a future version of OS/2 that would support not only the OS/2 Presentation Manager (PM) API, but parallel POSIX and WIN32 APIs as well.

As Microsoft Chairman Bill Gates' memorandum to his exec-

utive staff, written in April 1991 and leaked to the public that summer by parties unknown made clear, Microsoft was not entirely sincere in the statements they'd made in January. They'd already decided, when they made the January announcements, to try to make WIN32 the primary API for the future and to torpedo OS/2 2.0.

Nevertheless, it was not until the second half of 1991 that Microsoft began overtly to promote "Windows, Windows, Windows" in direct opposition to OS/2. Indeed, it was only after the leak of Gates' memo toward the end of June 1991, that Microsoft began explicitly to oppose OS/2 and to position Windows as a direct competitive alternative.

It is understandable, once Microsoft had chosen to cast the choice as Windows vs. OS/2, that Microsoft would then claim that the degree of acceptance of Windows made Windows the "winner" vs. OS/2. "The battle for the desktop is over," Gates pro-

claimed, "and Windows has won." To make that claim, however, Microsoft had, in effect, to rewrite history and to deny the previously complementary positioning of Windows and OS/2 that Microsoft had repeatedly insisted upon prior to the break with IBM.

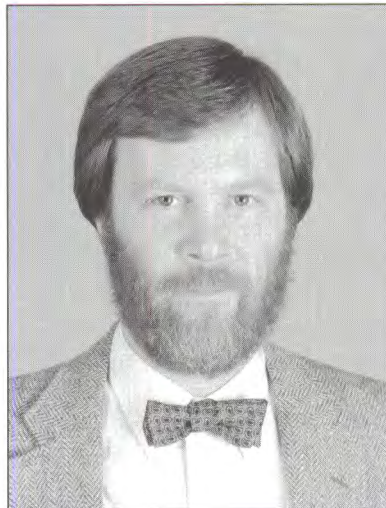
That is hardly the only way by which the present situation can be defined, however. Rather than view the matter as one of Windows vs. OS/2, as Microsoft obviously prefers to do, we might just as readily view both OS/2 and Windows NT as alternative migration paths for both DOS and for 16-bit Windows users. Both OS/2 and NT are viable succes-

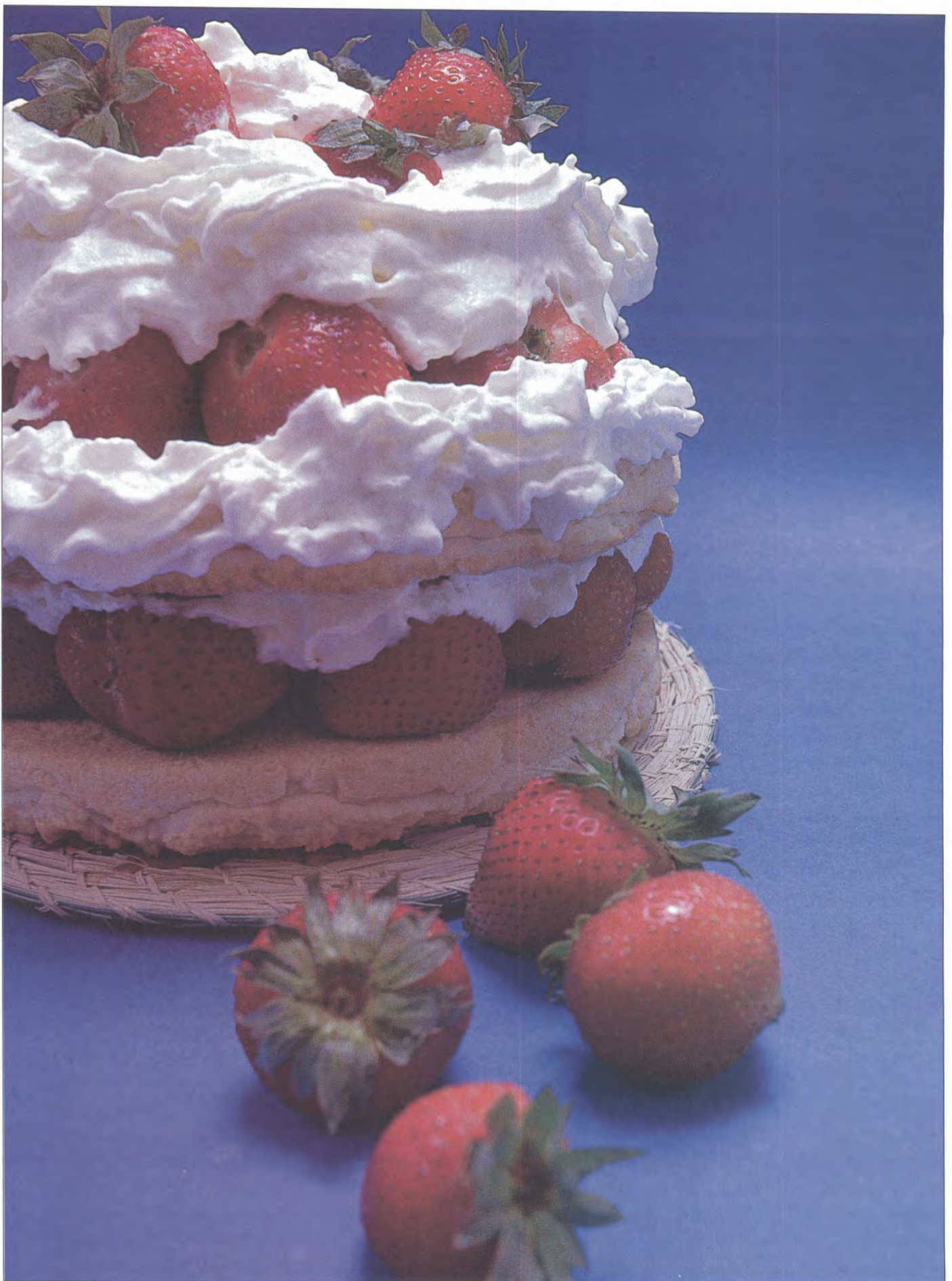
sors to both DOS and to Windows.

After all, Windows 3.X clearly is *not* the more powerful 32-bit, fully preemptive, multitasking and multithreaded replacement for DOS for which not only Microsoft and IBM but most of the industry is still looking. Windows 3.X is more accurately viewed as a sophisticated extension of DOS that partially but not completely overcomes its limitations. It is Windows NT and OS/2 2.0 that truly meet the basic criteria of a potential replacement for DOS.

If we look at it this way, then the relevant question becomes which offers a better migration path for DOS and for DOS/Win-

continued on page 21





DOS USERS CAN HAVE THEIR CAKE AND EAT IT TOO

OS/2 TODAY

OS/2 promises everything for tomorrow. But what it delivers today to corporate users and beginners alike is a power DOS that can revolutionize ordinary computing the day it's installed.

BY PAUL T. DUNCANSON, JR. WITH BRAD KLIEWER AND EDWIN BLACK

OS/2 is a wonderful contradiction. At once it heralds an exciting future of OS/2 applications, even as it transforms the average desktop user into a powerhouse DOS user.

True, one expects great things from OS/2 when running the wonderful 16- and 32-bit OS/2 programs. And there are some great Windows programs that not only run well under OS/2, but, because of the data exchange capability, integrate well with OS/2 applications. But, things change slowly. DOS programs remain the applications of choice for most users. IBM knows it and is committed to DOS upgrades for years. DOS power is the secret weapon OS/2 planners wield while developers rush up to the battle front preparing for global conquest.

Indeed, many say that the best thing about OS/2 is how well it runs the DOS applications already loaded into their desktops and networks. Sharp corporate players have realized this and are rapidly evangelizing the system throughout their firms. Beginners say that after one day with OS/2 they are doing things they were afraid to even try with DOS. As such, any investment in DOS and Windows is not only protected, it is supercharged.

So for now, forget about all the visionary talk about Q2 through Q4 rollouts that may slip before they ship. OS/2 may indeed be the operating system of tomorrow. But more important, it is the operating system of today.

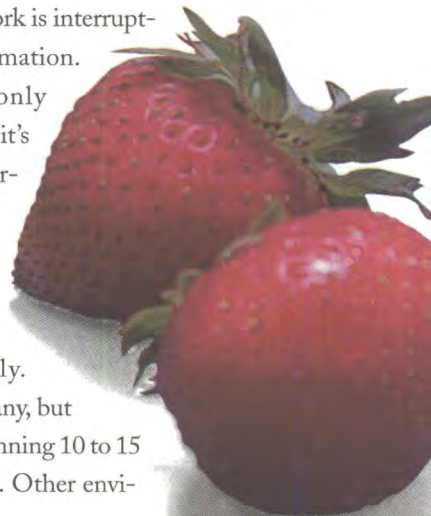
Here are seven examples of how real end users find the OS/2

DOS session helps them in their everyday work. After reading, please pass it along to a new user.

1. Simultaneous DOS sessions.

At first, you may think you don't need to run multiple DOS programs simultaneously. But most OS/2 converts soon discover that DOS multitasking is one of the most useful features of OS/2. You become so conditioned to the restraints of real DOS, that you begin to think that those restrictions are the natural way to work. Only after extended use of OS/2 DOS sessions, do you discover that office work begs for multitasking. From secretaries and executive assistants to CEO's, today's business world is filled with little crises. Suddenly, you find your work is interrupted by a request for information. That data is available only through a program—and it's not the program you're currently using.

With OS/2 you can have over 200 OS/2, Windows or DOS sessions running simultaneously. Nobody really runs that many, but you will often see people running 10 to 15 programs at the same time. Other envi-



ronments such as Windows and DESQview give you the ability to switch between multiple DOS programs, but OS/2 makes it simple and efficient. With the Workplace Shell desktop, any program is only a few mouse actions away. And, the switch is so quick and simple that average users can manage it. The fact is, real users won't use features that aren't easy to use.

As one new OS/2 user said, "My boss is always asking for information that is in a spreadsheet, database or word processing document I'm not running, when I'm in the middle of another program. Since I started using OS/2, I no longer have to save what I'm doing, exit the program, start the other program, get the information, close that program, restart my original program and get back to where I was. I tend to leave all the commonly used programs running. Now his request for information only requires a quick change of sessions and maybe loading the specific document with the information he needs. I can have that program print the document and immediately return to the job I was doing before I lose my train of thought."

2. Data transfers between DOS sessions via the OS/2 clipboard.

DOS programs really didn't share data very well. Often you were forced either to manually reenter data from one program into another or limit your choice of applications to those that provided a suite of integrated applications. But OS/2 was designed to give the user choices and exceed the limits imposed by DOS. For example, every OS/2 DOS session can use the OS/2 clipboard. Many DOS applications that were not designed to share data can do so under OS/2.

The clipboard is not without limitations; for example you can only use it from a windowed DOS session. This is not a particularly serious limitation since a simple Alt-Home keystroke will switch your DOS application between a full screen and windowed session.

The key to clipboard transfers is the System/Application icon in the upper left corner of the DOS session window. A simple click on this icon gives you menu choices that include *Mark*, *Copy*, *Copy All*, and *Paste*. Need to move something from your DOS database to your DOS word processor? Easy. The *Mark* menu item gives you a cursor with which you can select text with your mouse. The *Copy* menu item copies the selected text to the OS/2 clipboard. Switch to your DOS word processor session and put your cursor at the insertion point. Then select *Paste* from the menu and your DOS word processor thinks you're manually typing the data in

from the keyboard. In this manner, you can use the OS/2 clipboard to move data between DOS, Windows and OS/2 sessions and programs.

Want to send a note to the PC support staff asking if these are all the files that should be in a certain directory? Simply DIR the directory and select and copy the file list from the DOS window, then paste the list into your editor or word processor. Easy. Users learn to love this feature. The clipboard is also helpful in simplifying transfer of data from mainframe and minicomputer applications accessed from terminal emulation screens. For example, a 3270 screen running in a window can also use the clipboard. The ability to access the clipboard adds great flexibility to your DOS sessions.

3. Speed.

Yes, speed. While many DOS games will run slower under OS/2 than in a pure DOS environment where they have the entire machine to themselves, some key business applications will run faster under OS/2. Why the difference? OS/2 has two secret weapons. They are the HPFS and Super FAT file systems that make disk-intensive DOS programs run from three to 17 times faster under an OS/2 DOS session than under DOS 5.0 alone. At Dep Corporation, Edmund Hung, technical manager MIS, said, "We have a Btrieve DOS database program that has grown over the years to over 65 megs of data. Some of the operations on that database took two full days to complete on our fastest PC. We could only schedule it over the weekends. In the OS/2 DOS box, unmodified, the same programs take less than five hours. Over a tenfold increase in performance." Others report similar results and have been able to avoid costly conversions to midrange machines.

Of course, OS/2 cannot miraculously transform any DOS program into a speed demon. If you start multitasking extensively, you should expect slowdowns—particularly with interrupt intensive applications, such as communications software. For example, if you're using a DOS program to download a one megabyte file, archiving a file in another window and typing data into your word processor in a third, you will see slowdowns (though not nearly as severe as in other DOS multitasking environments). The fact remains, however, for some of those key monster DOS apps working without competition, you will run them measurably faster with OS/2.

4. More Real Memory available.

The Real Memory limit (that portion of DOS memory that resides below the 640K boundary of the earliest 8088-based PC's) con-

tinues to haunt DOS users. With DOS, you could end up with less than 500K of available Real Memory after loading mouse and LAN drivers. But in an OS/2 DOS session you can wield over 630K of available Real Memory after mouse and LAN drivers. If you're not using graphics, you can configure the DOS session as a CGA display, still get the great looking VGA text and have over 720K of Real Memory free! With a little more tweaking, you can enable the high memory segment to get another 64K of Real Memory. And you can do all this for up to 240 DOS sessions.

If you need protected memory, each DOS session can have up to 16 Megabytes of Extended Memory, 48 Megabytes of Expanded Memory, or 512 Megabytes of DPMI (Dos Protected Mode Interface) Memory. Remember that is for each DOS session. Don't have that much RAM in your machine? That's OK. With OS/2 you don't run out of memory until you run out of disk space, because RAM memory is virtualized by its demand page memory system.

5. Individually customized DOS sessions.

Every icon on the OS/2 desktop or in an OS/2 folder represents a unique object. Each of these objects may be individually customized via simple entries in its settings notebook. By pointing at an object and right clicking you get a pop-up menu. If you select the arrow next to the *Open* menu entry and select the *Settings* menu entry, the settings notebook for that object will open. The *Sessions* tab gets you to a page with a push button that says *DOS Settings*. Clicking on this push button leads you to a DOS setting screen for this particular icon. There are 47 different settings that may be changed here. Normally, this would be rather intimidating for a typical end user. But, as each item is selected, a help box appears that explains what the setting does and what the various options are.

With these different DOS settings you can specify the amount of EMS, XMS or DPMI memory this one instance of DOS to which it has access. You can enter the full path name to a DOS device driver that is to be loaded only when this particular DOS session (or DOS application) is started. You can limit the amount of real memory a small DOS application gets from 128K to 640K. You can determine whether the sound for this session is turned off when the session is running in background. You can grant this DOS session direct access to the hardware timer. You can set the number of file control blocks for this individual DOS session. And that's only the beginning. In essence, the settings notebook creates a unique CONFIG.SYS for each DOS session you want to define.

Once you have this DOS session set up the way you desire, you

simply close the settings notebook and it is set up that way forever. If you copy that DOS session, you get a new, different DOS session that starts out with the exact same settings as the original. Yet once copied, it may be modified without affecting the original. It's like having different machines line up to run your DOS programs!

This machine-within-a-machine handling extends to the entire DOS environment. For example, each instance running on the computer has its own environment, and hence its own path. While all DOS sessions share a single AUTOEXEC.BAT, a little tweaking can build custom batch files for specific sessions. For example, adding the line */p/k auto2.bat* to the parameters section of the program settings will run the named batch file (in this case, AUTO2.BAT) as if it were AUTOEXEC.BAT.

6. OS/2 replaces DOS menu programs.

In most companies, MIS installs the programs. When they do, they can give each DOS program a unique icon and title. It takes very little training to understand that to start a given program you simply point at it with a mouse and double click. Thus, the menu programs that many people used under DOS are no longer necessary. A surprising number of DOS users have never seen a DOS command line. With OS/2 they don't need to, if that is their desire.

With a little training most end users can easily learn to install DOS programs under OS/2. Simply copy a program icon from the templates folder and fill in the first page of the settings notebook that pops open. End users enjoy opening the settings notebook, selecting the tab and opening up the icon editor to design their own icon. They also enjoy modifying the titles under the icon by placing the mouse pointer over the title text, holding down the Alt key and left clicking the mouse to open up an edit box. Even DOS users love the easy-to-use OS/2 Workplace Shell.

7. Connecting to host systems.

If your business requires PC-to-host system connections, OS/2 may be a solution to some of your biggest headaches. Consider PC Support on the AS/400. This set of programs provides terminal emulation, file sharing, printer sharing and remote execution for AS/400 users. PC Support is available in two versions, DOS and OS/2, and both will run under OS/2.

For DOS users, PC Support has often been as much a bane as a boon. PC Support claims a large share of DOS real memory. For example, a DOS 5.0 PC Support user with 640K may have only 481K free (or a mere 297K if the extended memory option isn't used). Add a LAN or other hardware drivers (such as CD-ROM)

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SPECIAL REPORT

and you may have trouble loading large DOS applications while PC Support is running. To avoid such problems many corporate users will reboot the system without loading PC Support to use a networked spreadsheet or database, and later load PC Support. The user may repeat this reboot and load cycle several times during a day.

Perhaps the most difficult dilemma facing the OS/2 user of PC Support is deciding which version to use: DOS or OS/2. The DOS version can use OS/2 alone, while the OS/2 version requires the Communications Manager portion of Extended Services for OS/2. Although Extended Services is the more expensive option, it gives every session (DOS, OS/2 and Windows) access to the AS/400 services. With the DOS version, you must restrict your AS/400 activities to the session running PC Support. In either case, DOS sessions continue to have over 630K Real Memory free. OS/2 lets your DOS and AS/400 applications live in harmony.

And many more advantages

OS/2 has many more advantages for the DOS user. An errant DOS application can be killed from the OS/2 desktop without having to reboot the machine and therefore terminating other running sessions. All of those programs you purchase that tell you that you can't have your favorite DOS TSRs loaded are no longer a problem. Simply run your TSRs in a separate DOS session. You can even run multiple copies of the same DOS applications. Did you get a long cryptic message from your DOS program when you tried to run it? You can switch to another session, search the directories for the reason, while switching back as many times as required to the original DOS session to read that long cryptic message. Anything on a DOS session screen is preserved between invocations.

OS/2 adds new flexibility to the tiresome routine of life in the slow lane. As you become proficient with OS/2 and DOS multitasking, you will discover many new uses for this technology. Then, if you ever return to DOS—even if for a passing moment on a colleague's system—you will discover for yourself the primitive and inconvenient structure that once restrained your productivity. OS/2 maintains ties to the past while investing in the future. It really is a better DOS than DOS, yet lets you decide when DOS should become a shadow of your computing past. ♦

Paul T. Duncanson Jr. is the president of the Los Angeles OS/2 Users Group.

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—PC Magazine, January 12, 1993



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ZACHMANN'S VIEW

continued from page 15

dows users: OS/2 2.0 or Windows NT? The answer to that question, I suspect, will be critical in determining whether it is IBM or Microsoft who set the direction for the industry in the years ahead.

There are more than 100 million IBM and compatible systems in active use running MS-DOS or PC-DOS today. Microsoft would have us believe that nearly a fifth of those also run Windows. The real number is probably something less than half what's claimed and may be as few as 4-5 percent of the total. But even by Microsoft's reckoning it is no more than 20 percent.

Which then, will provide a better migration path for those 100 million users at least 80 million of whom do not use Windows at all yet? Will it be OS/2 or Windows NT? Which of the two will provide better compatibility for existing 16-bit DOS and Windows applications? Which will best preserve, at least during a transition period, the enormous investment users already have in the software they use to get the job done?

Ultimately, those are questions that every user, every organization, must decide individually. Collectively, however, our determinations of the answers to these questions will be a key to the relative success that OS/2 and Windows NT will have in the marketplace.

These aren't the only relevant questions, of course. The extent of applications support for OS/2 and NT; the relative time frames for the availability of advanced features such as support for multiprocessing, "portability" and sophisticated object-oriented capabilities and their importance to us; usability in a real-life networked environment; availability of development tools and so forth will also be important.

Historically, however, it has proved very difficult for any operating system to replace another unless it was able to provide solid backward compatibility and thus a migration path that preserved existing software investments. As users we have proved stubbornly resistant to any new operating system that requires us to give up what we've already got, no matter how attractive the new alternative may be.

It remains to be seen what the state of backward compatibility for 16-bit DOS and Windows applications will be with Windows NT. Present indications, however, suggest that NT is unlikely to do a better job and may very well not do nearly as well as OS/2 in this regard. That, combined with the delay for NT generally, creates an increasingly favorable climate for growing acceptance for OS/2. If Microsoft cannot complete Windows NT soon with a level of compatibility for existing applications at least as good as that which OS/2 provides, NT will have a very difficult time keeping up with OS/2 in the months and years ahead. ♦

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USER PROFILE



Flex time, a computer and OS/2 help a young mother multitask home and work responsibilities.

BY JUDITH A. RUBENSTEIN

HOMEL BUT NOT ALONE

It's shortly after noon, and Shaun L. Brown is getting ready to "go to work." First, however, this Fremont, California, Mom hoists her twins, Kyle and Kendra, into their respective highchairs. "There's a big plastic tarp under the chairs," she chuckles as she ponders today's lunch menu: French fries, a hot dog or chicken nuggets. After lunch and the usual clean-up—of kitchen and kids—Shaun puts the twins to bed for their afternoon nap. Shaun has become a mistress of organization. Two toddlers under two years of age quickly teach one the art of flexibility and creative solutions.

"Of course, this is an ideal day," she confides. Then she walks from their room to the apartment's main room, turns off the ringer on the telephone and heads for the master bedroom. In fact she's just completed her "commute" and is ready to begin work as a team leader for IBM. Most "working" days 24-year-old Shaun doesn't have to cope with freeway traffic, or worry about corporate image or the weather.

Before Shaun became a mother, she was a full-time

employee at IBM, where she worked for almost two years. Then came the twins, and her priorities changed. Fortunately, IBM is ahead of the workplace curve with its flex work leave of absence program. "The program gives an employee the opportunity to work from 20 to 40 hours per week, with the choice of working at home for all but four of those hours," explains Shaun. Currently Shaun spends only one full day a week in the office where she is a team leader for a team of information developers. The team writes on-line help information for one of IBM's larger storage management products. Data Facility Storage Management Sub System/Virtual Machine—known around the shop as DFSMS/VM—"allows people who use the VM operating system to manage their storage," Shaun explains. Even those of us who use less complex "big boxes" have frantically sought help while stuck in application, only to gaze uncomprehendingly at the "help" screen that comes up on the terminal. But Shaun, who holds a BA in English from Brigham Young University, assures: "We write our on-line help in plain English."

USER PROFILE

Amazingly, Shaun had very little computer background before IBM hired her fresh out of college in August 1989. Today, this savvy computer user speaks the lingo and relies heavily on OS/2. "Since I've been at IBM, I have had a chance to learn about computers and the system IBM uses and provides for its employees to work with," she explains. She's been a fan of OS/2 since she first began using it in January 1990. She started with 1.3 and has now graduated, like IBM, to 2.0.

Does OS/2 make her work life easier? You bet. She used to chafe against the limitations of the "editors" available to her before OS/2. "I didn't have an editor that would let me bring up three or four windows at a time and move things around. Now I can, and that's one feature I really like.

"Plus," Shaun adds, "I appreciate the ease of organizing my data." It's not that life before OS/2 was like living in the Iron Age, or, for that matter, in the 1980s. "When you just have a plain DOS system," she admits, "it is not hard to make directories and move data. But, it is not nearly as nice as being able to look at them."

Shaun is enthusiastic about the improvements in version 2.0 saying, "2.0 incorporates all of 1.3's basic concepts: you see all your directories, subdirectories and files, and you can organize your data to them in various applications. You can look at units of information graphically and "drag and drop."

Anything else she likes? "Yes," she admits sheepishly, "I like the games, although I don't have time to play them very often."

That's how, in part, OS/2 handles computing ease. But the increased productivity is even more important both to Shaun and her employer. Indeed recently, Shaun's manager at IBM inquired about how many hours she "really" works at home. (Shaun is expected to provide 20 hours per week to the company.) "I answered 'Only 20.' My manager asked," explains Shaun, "because she thought I was putting in much more based on the amount of work I produce."

Because OS/2 harnesses the computer, not the user, workers have time to think about improvements while the operating system is doing the work. Shaun complains that OS/2 doesn't allow



USER PROFILE

her to communicate with the big host system housed in San Jose. But that's precisely what she must commute-compute to. "I log onto the host to check my mail, to communicate with my co-workers and because the product I work in runs on the host. But I can't use Communications Manager to call in to the host." Unfortunately, her particular host to PC configuration requires an IBM internal program (IIN-HPO) instead of the more full-featured communications manager. In her computer dream world, Shaun wishes that OS/2 "could also make the modem connection because then I could use all the other features of Communications Manager—downloading, uploading—instead of IBM's internal program. I do use IIN-HPO, but I think it is slower and far more limited than the communications capability Communications Manager has."

All it takes to join the growing ranks of telecommuters is a computer, a phone and modem, all of which IBM provides for Shaun. Her obligation was to find workspace in her apartment to accommodate the PS/2, an IBM 2400 bps modem and a dot matrix Pro Printer. She met the challenge by converting part of her bedroom into a makeshift workspace with college-style office furniture. Her "desk," a long door propped up on two filing cabinets, holds her computer and provides some working space. "I use my bed to spread out all my papers," she says, adding, "It's not much of an office. But it's the only place in the apartment where I can work that is far enough away from the kids so that I don't interrupt their naps."

Whether or not T and T (telecomputing and telecommuting) is the wave of the future, Shaun praises IBM for giving so many people a chance to try it out. Indeed, she declares, "As the freeways become more packed, I guess there are only two choices—telecommuting or better transportation systems."

Of course, without close eyeball supervision, risks are involved for the employer. "You must be able to trust your employees," comments Shaun, "and be willing to take some risk." And both employee and employer must evaluate what they are missing with remote employment. "Are you losing that synergy that exists in the office when people can work in the halls, share ideas, gather for formal

and informal meetings and hash things out?" asks Shaun. Missing, too, are simple, but telling, body-language signals. For example, Shaun participates in conference calls from her home when "must-attend" meetings are on the agenda. But, she says, "It really isn't the same because you can't see people's faces—the nonverbal conversations that are going on. It's a lot harder to express your ideas or stress your point of view and know how it has been received

when you are on a teleconference call."

Still, she wouldn't trade her set-up. "It is the only way that I could choose to continue with my career," Shaun insists. "My kids are my first priority." At home, too, her concentration during her working hours is unimpeded. "Nobody knocks on my office door, nobody stops by to chat, so I can work without interruption. I don't have to go to meetings every day. When I'm working at home,

I work the full hour for every hour I put in."

When her twins enter kindergarten, Shaun will have to make a decision. Currently, IBM employees can opt to participate in the flex program for five years. But even when her children start school, says Shaun, "I still want to be at the crossroads for them—when they leave as well as when they come home. So if I could go into the office for a six-hour day, then I would probably make that decision."

But, she wonders, "Am I really going to be more productive in the office? Now I have the optimum productivity place to work. Why should I want to go back to the office and introduce all those interruptions again?" ♦

Judith A. Rubenstein is publisher and executive editor of Staff Publications, which publishes a magazine for a medical specialty.



Shaun readies her twins for naptime.

Micro



Micrografx founders George and J. Paul Grayson, as featured in the 1992 Annual Report.

Micrografx—Red Hot and Quick on the Draw

A small company in Texas has become a pivotal player in the high-stakes operating system sweepstakes. OS/2 has become its success story, and Micrografx is returning the favor.

BY EDWIN BLACK

Flickering strobe lights, accelerating video images and a new age music crescendo enrapture a crowd of thousands in a Las Vegas auditorium at COMDEX's hottest diversion—the Micrografx Chili Cookoff. Jalapenos and habaneras lace the steaming chili kettles in the auditorium's corridors as if to say—“no foolin’ around.” And even the armadillos outside seem to be motivated as they race down a narrow makeshift track. This is show business and corporate muscle all in one because when it comes to Micrografx, chili smoke and Mirrors are only the beginning.

Micrografx is a relatively small firm, located in Richardson, Texas, employing just 300-plus worldwide. But its importance to OS/2—and indeed the evolution of the fierce Windows-OS/2 competition—cannot be underestimated. Micrografx and its founders—George and J. Paul Grayson—literally have been the fulcrum during the teeter-totter struggle between IBM and Microsoft. It was Micrografx that several years ago created Mirrors, the all-important porting technology for Windows so indispensable to Microsoft. Yet today, Micrografx is counted as one of IBM's most valued partners on the OS/2 team.

The firm, founded in 1982 by the Grayson brothers on a few thousand dollars borrowed from their Mastercard, has registered profitable year after year as a strategic ally of Microsoft. A loan from Microsoft helped Micrografx at a key moment. As Windows' fortunes rose, so did the fortunes of Micrografx. Easy-to-use Windows applications such as Designer and Draw enjoyed six-digit sales volume. Paul Grayson belittled as “whiners” those who preferred Presentation Manager and warned they were making an incalculable strategic error by not joining the Windows movement.

Of course, during those early years, Windows was but a step-

ping stone to OS/2. It was never intended as a true operating system. So, undoubtedly, the Graysons did not see Microsoft and IBM as monumental opponents.

As the promise of OS/2 continued, and the fast growth of Windows readied the marketplace, Micrografx proved its value to users and manufacturers alike. Breaking performance records became a habit at Micrografx. For example, during one typical fiscal quarter, Micrografx boasted a 50 percent revenue increase over the same period a year before. Those sorts of numbers became standard for the company as it impressed both the computer world and eventually the investment community. It wasn't long before Micrografx went public.

Then in April 1991, Microsoft and IBM parted company over OS/2. Knight to queen's rook. IBM signed Micrografx as a key software partner to develop vital “new technologies” for OS/2. The deal included device drivers and graphics. But perhaps most important, Micrografx would deliver technology needed to allow the growing numbers of Windows applications—and many more down the way—to migrate to OS/2. For Micrografx, it would now be a *téchnage à trois*.

Jubilant Micrografx officials celebrated the new IBM embrace, as company chairman Paul Grayson declared, “This is probably the greatest accomplishment in our careers. It's something we worked very hard for.”

It was indeed a huge gamble for the visionary Graysons. Nearly 90 percent of the firm's revenues derived from Windows applications. But Paul Grayson felt strongly that the future belonged to OS/2. Indeed, that future could be symbiotically successful since Micrografx could enable new applications to port to OS/2 and

VENDOR PROFILE

develop more of its own apps to work under IBM's genuine multitasking environment.

T rue, Windows today has an estimated 8-12 million users. But Grayson feels that NT is "not there" now and won't be until the end of this year—or perhaps even the beginning of 1994. "If they do bring it out any faster, it's going to be version 1.uh-oh," Paul jokes.

The lure of OS/2, on the other hand, is the potential tap into 80 million desktops. By Grayson's thinking, both Micrografx and OS/2 could grow together, duplicating—and then bettering—the spectacular association Micrografx saw with Microsoft and Windows. Indeed, Micrografx could enjoy the enviable fence-top position of being an invaluable ally to both factions. So, although the firm will be full steam ahead as an OS/2 player, its simultaneous involvement with Microsoft will be schizophrenic—at once both competitive and cooperative. The strategy is a high-stakes gamble indeed.

Yet that gamble has not yet paid off. First, tangoing with IBM meant tangling and competing with former ally Bill Gates. In an interview at the time, Paul Grayson conceded that Gates, "just wants to kick our ass." Later, Grayson told *OS/2 Professional*, "that's not unusual. He wants to kick everybody's ass." Second, Micrografx' future is now entangled in the big blueocracy.

In fact, IBM was initially responsible for the distribution of Mirrors. But when the new relationship went finalized just before COMDEX/Fall '92, IBM agreed to let Micrografx assume all responsibility for its porting product. The company, quick on the draw, geared up for a big market push worldwide. But not before some disheartening financial information wafted toward Wall Street. The company boosted its fiscal '92-'93 revenues, however, its operating expenses rose dramatically and the bottom line was break-even.

T he computer media was filled with reports that Wall Street had forced the ouster of George Grayson who was president. Paul Grayson concedes, "There was a direct relationship between the company's performance and George's direction." Two years ago, George became the chief operating officer. Micrografx insiders confide, "It worked well for 18 months, but six months ago, George took actions on a *de facto* basis. He restructured so that only three instead of 10 vice presidents directly reported to him."

Late last year, George resigned. Media reports attributed the resignation to pressure from Wall Street. But a board member told

OS/2 Professional, "there was no intent to get George to leave the company. We actually tried to get him to stay as co-chair. But he resigned in protest."

Certainly there was a personal dimension to the resignation. Brother Paul supported the board vote. "We always had a healthy sibling rivalry," recounts Paul, adding, "We felt strongly about issues and sometimes strongly disagreed. But this generally channeled to the benefit of the company."

But with Paul firmly at the helm, Micrografx is pursuing the OS/2 option aggressively—even as he maintains his Windows connection. "It is important for our customers to have options," asserts Paul. "To make OS/2 successful, we have to help IBM and OS/2 compensate for weaknesses. We have helped with Mirrors by making it very easy to port Windows apps into OS/2. We are helping the developer community protect its investment in the Windows API. Remember, to us, which API a developer uses is not a religious issue. It is to IBM and Microsoft, but not to us."

Paul, as a self-described OS/2 evangelist, looks forward to the imminent release of 2.1, and speaks of the new update almost poetically: "OS/2 2.1 will be a watershed release. It runs Windows apps a lot better. It has a 32-bit graphics engine. It's less buggy, cleaner and faster, it hangs together. Overall, it has the look and feel of quality where the sum of its parts are indeed greater than the whole."

If Micrografx is in fact a pivotal factor in OS/2, the central figure in the undertaking is Andrew Cohen, the firm's affable director of systems development. "I'm the man with the ultimate responsibility for systems development and for working with IBM," says Cohen. "And, I'm the OS/2 evangelist here."

Under Cohen's baton are a number of applications. For OS/2, Andy boasts Designer (his "flagship"), Draw (Andy calls it "fast and friendly") and of course the Mirrors migration tool. Micrografx also produces numerous Windows apps, including Picture Publisher, Charisma, ABC Flowcharter, Windows Orgcharting, Graphics Works and the low-end product, Photo Magic.

Like others, Cohen is convinced that Mirrors will make a fundamental difference for OS/2. "The reality is that the world's apps were not completely portable into OS/2. You cannot make the world rewrite their apps. OS/2 has already fought that battle. But Mirrors will change all that.

"Most important," he continues, "is that Mirrors will allow developers who don't have a lot of cash and funding to get onto the platform." Cohen is enthusiastic about the future of IBM's system

VENDOR PROFILE

because, "Windows is just an extension of DOS. OS/2 is really an operating system. And it's an operating system that will allow ISVs (independent software vendors) entrance into an environment to produce mission critical applications."

For Micrografx, being on the IBM team means immediate access to OS/2's two million users, and millions more to be added this year. "We want to become one of the ten largest ISVs in the world," says Cohen. "We think OS/2 can help us become one of the top ten—and penetrate into the corporate world via IBM."

Indeed, Cohen sings the praises of OS/2 because the company uses it. "Many of us have it loaded onto our desktops. I do," says Cohen. He generally uses several apps at once, including Hyper-Access for constant communication with CompuServe and file transfers with other points, MS Project in Windows, Lotus Notes for OS/2, Microsoft Excel for OS/2 and three word processors, Describe, Wordperfect and Word. "The big thing," he says, "is that if one of the programs crashes, I don't have to reboot. And I love my Workplace Shell."

It's all loaded onto a six-pound 486/33 AquilLine notebook, sporting 16MB of RAM and 250MB hard drive, all plugged into an external NEC 3FG. The notebook fits into Cohen's briefcase and he takes it with him wherever he goes.

When Cohen is working on development, OS/2 makes life easier. "Developers can compile and debug on the same machine," he explains, adding, "Time is a key factor in any development cycle. OS/2 really helps."

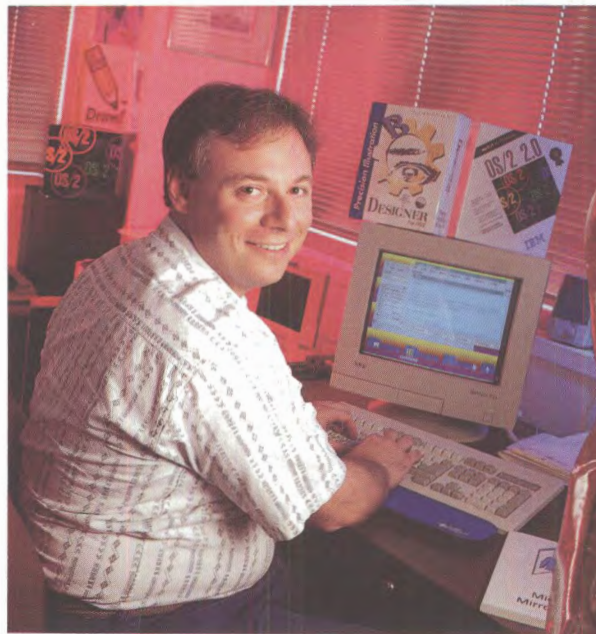
The system has some distance to go for Cohen's taste. Among the improvements he wants most, security is a major factor.

Lest anyone think that cold business decisions alone dominate the thinking of Micrografx officials, chili consumers should remember there's a corporate conscience lurking down there in Richardson. That spectacular and oh-so-chic chili cookoff at COMDEX is more than just an image booster. The profits are sent to the Center for Missing and Exploited Children in Virginia. The center has a special place in the heart of the Graysons and other computer industry leaders. In fact, the exotic technology that allows investi-

gators to "age" the look of children on a screen is Micrografx software at work. As Micrografx grows, it expects its commitment to the center to be enhanced.

Micrografx may be just a small software company in Richardson, Texas. But it is staying alive in a fiercely competitive environment by being quick on the Draw when it comes to market shifting. When it shoots, it shoots straight, and you can expect a heckuva lot more in the years to come than just smoke and Mirrors. ♦

Edwin Black is the executive editor of OS/2 Professional.



Andrew Cohen, director of systems development, is "the OS/2 evangelist" at Micrografx. (Photo: Barksdale McNider.)

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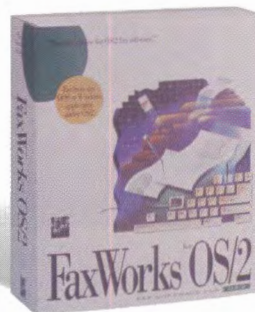
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Circle #23

Q & A

A straight-talk interview for OS/2 professionals

JOHN SOYRING

Strategy and Vision for OS/2

John Soyring, director of software development programs for IBM's Personal Software Products division, has been associated with OS/2 since 1.x. Today, he is one of a small group of men at the epicenter of OS/2's continuing development and hoped-for triumph. Indeed, he and three or four others have the key responsibility for all that goes right and wrong with OS/2. *OS/2 Professional* editors Edwin Black and Bradley D. Klierer caught up with Soyring at last November's COMDEX. In a poolside interview, Soyring revealed much about the strategy and visions for OS/2's proliferation. An edited transcript follows.

Edwin Black: By the end of January, will there be in excess of 2 million users of OS/2 2.0?

John Soyring: Well, if you just extrapolate from what we shipped during the first 120 days [a million copies] we're well on track to achieve that type of an objective. As [IBM Personal Software Products division president] Lee Reiswig mentioned earlier today, it's very difficult to predict exactly where we will be. But demand continues to pick up and our shipments and order rates are very strong. It makes that [two million] a fairly reasonable estimate. [Editor's Note: At press time in late December, more than 1.7 million copies had been shipped.]

EB: We heard that if plans hold true that IBM will actually add something like a million new users per month come spring. Is that an optimistic or realistic projection?

JS: That would be wonderful indeed if we're adding users at that rate.

What's really going to drive it, I think, during 1993, will be the fact that a number of people will buy a 486 right out of the box.

They'll say "I'm looking to buy a new home PC. I'm trying to decide whether I get the 50 MHz or 66 MHz 486. I don't want to install an operating system like DOS when I'm going to have 12

megabytes or 16 megabytes of memory. Nor do I want to let DOS constrain me to 640K or a small amount of memory. I want a machine where the operating system is balanced with the power. That's why I'm going to pick an operating system like OS/2."

EB: So hardware upgrades into the 486 era are intrinsic to the strategy.

JS: Yes, we're going to see a lot of people buy the operating system just because they have hardware that's going untapped if they don't use an operating system such as OS/2. Putting DOS or DOS plus some of the extenders like Windows on a 486 is kind of like buying one of the new 12 cylinder Jaguars and only buying six spark plugs.

When you buy OS/2, you start tapping the power immediately. A lot of people think it's just 32-bit processing. But it's a lot



Q & A

more. It's the concurrency that lets you do multiple things at once. Just think of some of these other operating systems. You have to retrieve information off the disk. But when you go to the disk, or when you go off to communicate across the line, you get to see a beautifully crafted hourglass appear on your screen and watch it for a while.

With OS/2 you can spawn off another task, let that communication go off and then in the foreground keep viewing information, or inputting information.

EB: While we get the sense that most OS/2 users today are the big corporate guys, we know you have an 800 number. You are trying to reach out to lower end...

JS: Corporate users are in the 30-50 percent range. Or perhaps we should say that 20-40 percent are end-user consumers. That's worldwide. In the United States alone, there are still a very large percentage that are consumers.

EB: What percentage?

JS: We're not releasing that right now.

EB: Majority or minority?

JS: In the United States? For the first million it was a very large percentage, and I won't say whether it was majority. But consumers—just individuals buying—are a very large percentage.

EB: So how does the corporate community fit in?

JS: We're still on track with our expectations for corporations. We expected corporations with OS/2 to buy in relatively small numbers to start their development work, and maybe for small pilots of their applications as they start to roll out.

EB: What about in Europe? Does the same corporate-to-consumer formula apply?

JS: In Europe, a higher percentage are corporate buyers. And part of that is attributed to an 800 number for direct response ordering and fulfillment from the United States. Remember, the U.S. market is 250 million-plus people; the European market is 300 million or so, but in multiple languages, without a single direct central marketing organization. It's broken up. Every country has its own marketing and own sales organizations.

EB: And European consumers?

JS: Many of the big European countries are focusing on their large corporate accounts. But in Germany, for example, every box of

OS/2 is being scarfed up by consumers before we could even ship. We're just getting to the point now where we're able to supply the demand of some of these countries.

EB: One might ask why is it that better than 50.1 percent of the users of OS/2 at this time are living outside the United States?

JS: It's complex. First, in Europe, many people skipped the DOS generation, and indeed they skipped PCs. For years, they were using terminals attached to mainframes or minis. When they decided to make the move, it was a little later than in North America. By that time, 386 PCs—and now 486 PCs—were shipping, so they bought those for the first time. And when they bought them, they said, "Well, why buy a 10-year-old operating system. Let's go with OS/2 version 1." That's why version 1 sold very well in Europe.

Second, in Europe, they tend to be ahead of the United States in networking, in X.25 protocol, in ISDN, in fiber networking. And if you take a look at which operating system runs best on a network environment, there's no comparison. OS/2 is far superior to DOS even with the extenders because of OS/2's preemptive multitasking. With OS/2, you can handle interrupts coming in on a communication line while you're doing something else. It provides addressing protection so that if the communication session fails, the rest of your system doesn't fail. You recover.

Brad Kiewer: Ironically, if you look at the development of the IBM PC in its early years, it was driven by a lot of businesses buying, and then people found that they were using it at home for some of their work.

JS: Right.

BK: Do you see that same kind of development coming with OS/2 or are you going to be more directly marketing to the end-user at home?

JS: Last night, in fact, I had dinner with two of our very large customers. They're in a position now where they have tested the applications, they feel comfortable with the environment, they're about to start replicating it throughout their enterprises in large numbers. So they're starting to sign the checks for large numbers of licenses which they intend to purchase to roll out to their enterprises. But what we found interesting is that similar to the PC phenomena in the early 1980s, the people who are buying and using these in their offices are also many of the power users. Reiswig mentioned that 50 percent of the support calls are from people who assembled their own PCs in their garages or their

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kitchens. There are no logos on these machines.

EB: These people are exporting the system up to the corporate level.

JS: Exactly. These people are becoming the evangelists, they're zealots. They're buying OS/2 because they recognize the power that's in OS/2, combined with the powerful PCs that they're assembling themselves. In fact, these people have been some of our biggest advocates within the industry.

The same thing really happened in the early 1980s. These power users started getting into it and then they convinced everyone else. The PC kind of came in the back doors of the corporations. The IS executives didn't buy them initially. People brought them into the departments themselves. Pretty soon the companies found out they had hundreds and thousands of PCs around, and soon after that they linked them together.

We are now working on both ends, we're marketing to the corporations, the IS executives, as well as consumers. In addition to that, we're marketing to a very important vertical segment, namely, software developers. To us, that is a very large market opportunity. From the estimates, we believe there are 4 million plus developers worldwide who are today creating DOS applications, Windows applications, OS/2 applications or host applications.

EB: How many are U.S.-based?

JS: My guess? Probably about half—based on numbers from vendors who produce software development tools for a living. Remember, not only are developers a large community, but a very influential community. If they start using OS/2 today to develop DOS applications, or Windows applications or host applications, pretty soon I think they're going to see the benefits of OS/2 and then start developing more and more native OS/2 32-bit applications.

EB: Who is represented in the 85,000 registered users that we're mailing *OS/2 Professional* to in January? Some of these 4 million developers?

JS: They're in there. Those are the people who return their registration cards. The PC industry has a terrible track record of having registration cards returned, even if we offer incentives.

EB: You're saying that it's the really dedicated user who is turning in those cards.

JS: I don't think we've figured out why some people turn them in and others don't. Certainly, there are some who are very dedicated but don't turn in their registration card. There are novice users

who send in the registration card—and other novices don't. I haven't yet found a person who can tell me why or how it happens. I talk to people out at Borland and Lotus and other places where they try to get people to turn in their registration cards. They don't know either.

EB: Have you done demographics on the ones who have?

JS: Of those that do fill them out, we took a look at the demographics, and found that it's anywhere from power users to small businesses to large corporations. There are a lot of large corporations who don't turn them in either.

EB: Why?

JS: Because buying patterns are so different. Sometimes they're centrally purchased. Sometimes they're purchased by departments. And sometimes they're purchased with additional license agreements conveying the right to make copies. Those companies don't tell us who bought them and who's using them, other than that their purchasing department bought 10,000 licenses.

EB: How often does that happen?

JS: Often. A lot of our registration cards users that your magazine *OS/2 Professional* is being sent to are still in the purchasing department responsible for hundreds of purchases.

BK: You mentioned that people are, especially in the corporate environment, using OS/2 to develop DOS applications. Yet if you look at the IBM C compiler, it develops only 32-bit code.

JS: Right, that's why it's so important to have other compilers. Like the Watcom compiler allows you to develop DOS, Windows or OS/2 code.

BK: Who do you see as being the major force in cross-platform development?

JS: Well, today the dominant vendor for C compilers is Borland. They've stolen away market share from so many other vendors, and done it very well.

BK: Does their debugger tend to run OK under the DOS environment in OS/2?

JS: There've been some versions of the debugger where they had to get some fixes applied. But the ones I've talked to, say, "yeah this is working well."

BK: The debuggers can traditionally be a problem?

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JS: Yes. That's why I mentioned there're some, but we do a pretty good job of faithfully reproducing the DOS environment. It's not an emulated DOS. There's a real DOS we built that's included right in OS/2 2.0. And it's pretty close to DOS 5.

BK: One of the things I've found using OS/2 with DOS applications is that you have a lot more memory free when you're running LANs than when you're running connections to AS/400s, or other large systems. Yet it doesn't seem to be something that IBM emphasizes very much when you hear about OS/2.

JS: It's one of the things I personally emphasize all the time. But we must train others in IBM to emphasize it even if we don't in our executive speeches. Connectivity is really one of the benefits. If you look at the votes that are coming into us—the consultants, the press, the end-users—they say we *truly* do have a better DOS than any of the DOS environments, better than IBM DOS, Digital Research DOS or Microsoft DOS. And what are the benefits? The biggest benefit, the one we focus most on providing functionality for, is how much real address space do you get within a virtual DOS machine. And as you know, you figure a virtual DOS machine has about 740KB of the 640 available of real address space in CGA mode. And, in fact, you can get anywhere from 640 on up to 714, you can use EGA or VGA mode and still get about 640. This is even after the device drivers are loaded.

BK: I was wondering whether you're making an attempt to reach the MIS departments, say those people who are AS/400 or mainframe oriented as opposed to the people who already have a lot of knowledge about PCs. And, if so, how are you going about that?

JS: For the Fortune N-thousand—I don't know how many it is—where IBM has account executives and sales teams dedicated, we now have a worldwide market plan for each one of these accounts. These teams go in, find out how they can construct the best solutions for these customers, their IS executives and their entire corporations, all based on OS/2.

BK: When you say "these teams," what type of teams? Is this a combination of an SE and somebody who knows OS/2?

JS: For some of the largest corporations, take World Bank of Canada, for example, there's a very large team that's comprised of marketing reps who know all the terms and conditions of contracts so we can get the right services for the client. They combine with technical support teams, the SEs and support staffs at both a national and international level who are helping out in this situa-

tion as well as people at IBM and business partners who have vertical solutions and horizontal solutions and applications. It could be a specific banking or mailing application that could meet their requirements. Or we bring all these people in to put together a total solution that meets their total requirements. We've been able to do that with large companies such as World Bank in Canada. And indeed there are other large banks with which we have a similar arrangement.

EB: People are always talking about OS/2 as the system of today and the future. It will preserve your DOS and look forward to the connectivity of the future. But then they have this asterisk about Taligent and I understand that the microkernel for OS/2 will be the same for Taligent.

JS: IBM is basing a future version of OS/2 on the Mach microkernel. That IBM microkernel will be supporting the OS/2 environments, various Unix environments, DOS and others. We're also working with Taligent and we're encouraging them to consider the Mach microkernel as a basis for their operating system. But really, Taligent is a separate company and I have to leave it up to them to make that announcement.

EB: So you're encouraging them or it's a done deal?

JS: We're encouraging them. I can't make the decision for them. [Editor's Note: Sources say the deal is cut, even if the ink isn't dry on the agreement.]

EB: So is the next super wonderful system coming out of Taligent going to obsolete OS/2?

JS: No.

EB: And you'll repeat those words in two years?

JS: Yes. Taligent is building a new operating system from the ground up that's object oriented for building new object-oriented applications. It's going to be a great operating system. But what we're doing in parallel is licensing technology back from Taligent as they develop this object-oriented technology. We intend to integrate that in future releases of OS/2 and AIX. We want as much commonality as possible with Taligent from a programming environment and end-user environment in future years. Remember, we have also licensed technology to Taligent. It goes both ways. And by integrating technology both ways, we're assured of a lot of commonality. In addition we want the Taligent operating system to be able to run OS/2 PM applications, as well as 32-bit applications unmodified.

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BK: A few years ago, there was talk about cross-licensing with NeXT. Has anything come of that?

JS: IBM entered into a license agreement for the NeXT step technology. We took a close and careful look at it, and what we saw vis-à-vis OS/2 was that there was technology that we already had, or there was technology that's become very popular in the industry from Apple and others that we've been able to license. We chose to go with Apple technology. There were some inhibitors with the NeXT technology that made it a little difficult putting it into the Intel environment. The graphical interface of NeXT is based on Display Postscript. Display Postscript requires floating point calculations. As you know all the Intel-based processors, 286s and 386SXs and 386DXs, don't come standard with floating point processing.

EB: The momentum spoken of by Lee Reiswig, what happens to this "mo" when Windows Not There... excuse me, Windows NT... finally gets its act together, whatever quarter that is, first, second, third or fourth? We know it will receive tons of media and hype. What happens the day after that?

JS: Microsoft is very good at marketing. There's no question about it. We view them as a very strong competitor because of their marketing skills. We also believe that with OS/2 we have today a technologic lead. We also believe that the technology that we're investing in for portable operating systems, for advanced end-user interfaces with pen technology and with voice recognition technology, and where we are with object-oriented technology—we think all that puts us two, three or more years ahead of NT.

EB: One-to-two was what I heard you say at lunch.

JS: I would say two-to-three, in my personal opinion. This March, we start shipping a system object model. Microsoft and other vendors have talked about having a system object model "sometime in the future." That's 1994 or later. But we're already going to be through several iterations by the time they ship that first system object model, assuming they even do so, in '94.

EB: So you're gonna have a run for your money—but you're ready for it?

JS: We have to view them seriously. They've done well in the market place. We're gonna watch whatever they do, and whatever comes out of it as well as other vendors, not just Microsoft.

EB: Thank you Mr. Soyring. ♦



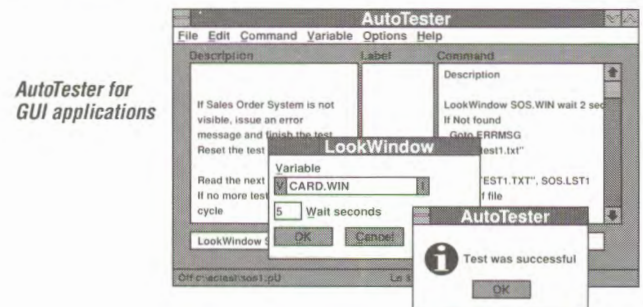
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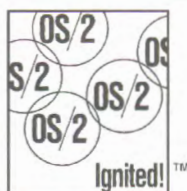
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Micrografx Draw 3.0 for OS/2

REVIEWED BY HERB TYSON

Plan on giving yourself at least a whole weekend to explore and enjoy Draw 3.0 for OS/2. The OS/2 version of Micrografx's popular drawing program offers a lot of value, utility and entertainment. Draw 3.0 is powerful, versatile and fun—yes, fun! While it's not perfect (see **Don't Get Bent Out of Shape**, page 39), the pluses seem to outweigh any minuses.

A Different Path

If you learned computer drawing using Microsoft Windows Paintbrush, you'll have to cross a few new bridges when you start using Micrografx Draw. Once you do, however, you're likely to find it worth the journey. Using Paintbrush is largely intuitive. You just pick a tool and start making designs on the screen. You gradually add and subtract attributes until the screen looks the way you want it to look. You can apply shapes and text. However, once you've applied a shape or text, while you can perform some manipulation, you can forget about editing its original form.

Draw has a different point of departure. In Draw, a picture consists of one or more symbols. Each symbol is a distinct graphic or text element. If you see something you want to delete, don't search for an "eraser." Instead, select the symbol that contains what you want to delete, and then edit that symbol. If you don't like where a circle is, just click on it, and drag it to a new location.

The whole process at first is too indirect, and seems as if it's going to be a lot more work. Once you get used to the different approach, however, graphics editing ends up being quite easy. Compare Draw to Paintbrush. If you don't like where something is, it's often extremely difficult to isolate a single element because it's all one big drawing. It's kind of like chili and salt. If you taste too much salt, there's really no effective method of removing it. All you can do is add more of everything else. That's probably why chili often ends up in such big batches. It's the same way with Paintbrush drawings. Once you have put something onto the canvas, you can only undo it if it is the last thing you did. Otherwise,

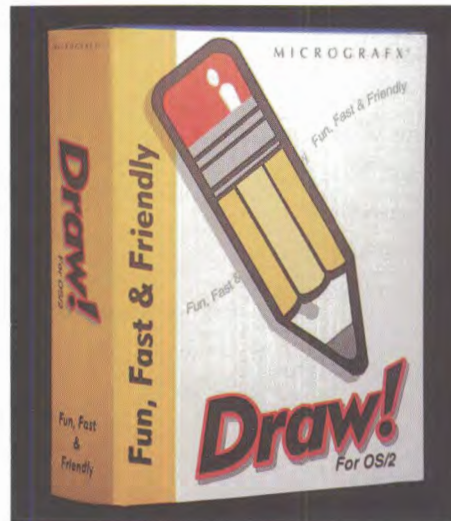
you will have a dickens of a time trying to isolate it.

In Draw, however, just click on the salt, and press the delete key. Or, edit it down to a reasonable amount. This separation of elements into *layers* is what distinguishes a painting package from a drawing package. In many respects, a drawing package resembles the CAD (Computer Aided Drafting) programs used by architects, but with features and tools designed for artists rather than engineers.

Layering of symbols has other much more important benefits as well. Draw comes with some 2,900 clip art images. Using the built-in clip art catalog, you can preview and then pull in bits and pieces from more than two dozen categories of images (animals, cartoons, office equipment, signs, icons, transportation, presidents, landmarks and so forth). Are you an aspiring cartoonist? Draw might be your medium. You get a variety of bodies, heads, eyes, ears, animals to get started. Draw even includes pre-drawn balloons (those billowing ovals above the heads of Snoopy and Garfield that contain their thoughts and words), as well as a Balloon font. As you improve, you can add your own symbols to the catalog.

Special Effects

About 10 years ago, the Museum of Art in Toledo exhibited a series of clever works by a pop artist. The collection included such works as "Circle into a Square," which showed a circle metamorphosing into a square. Another was "Apple into a Banana." Draw has its own version of this in a command called **Blend**. First, draw a small red circle. Next, draw a large yellow square. Then, select the two symbols and execute the **Blend** command. Select any number of steps from one to 100. Blend then fills in the intervening space with that many symbols, showing the transformation from one object into another. The transformation takes into account size, color and shape, going from a small red circle, to a rounded orange square, to the yellow square. Starting with two circles and 100 steps, you get something that resembles the Alaska Pipeline.



Going from a drawing of a horse and buggy to a car also presents an interesting and symbolic picture. Each intervening step produces a separate symbol, giving you additional control should you not be entirely satisfied. The tutorial in the Draw manual uses this feature to produce a flock of geese (or were they ducks?) flying in V formation.

Another impressive special effect is fitting text to curves. You create a symbol that contains text. Next, you select it and any other symbol to which you want that text to cling. Then you apply the **Fit Text to Curve** command. The text drapes itself along the selected surface. It needn't be a plain simple circular curve. It can be a triangle, a square, a mountain range or even a stock market graph, depending on how your week is going.

While you're at it, you also can convert text to curves. This gives you the flexibility to edit the shapes and sizes of letters (e.g., for designing company logos and trademarks) in imaginative and novel ways. Imagine the word Swallow with the S gulping down the rest of the word. Say...that sounds like the perfect logo for a conglomerate.

Draw also has a Rotate feature. This feature allows you to rotate any symbol—including text—to any angle you want. You can set the axis at the center of the symbol, or at any other point in the drawing. Using the latter technique, you can draw a reference point, and then rotate a variety of different symbols around it. How's that, for a different slant?

And, speaking of slant, you can slant any symbol (including text) any amount you want. This is especially handy when creating three-dimensional drawings and shadow effects. For example, first draw an object. Then make a copy of it. Color the copy gray or black, and then slant it to form a perfect shadow. Then rotate the shadow so that it is anchored to the same logical point as the original. With these kinds of built-in special effects, almost anyone can look like a consummate artiste.

Drawing and Text Tools

For creating symbols, Draw lets you create text in any font and point size. Nineteen Adobe typefaces are included in the package. Draw has standard tools for drawing ovals, rectangles, rounded rectangles, polygons and free-form figures, as well as less standard multi-bend curves, wedges and arcs. Some of this you'll recognize from PM Chart. Draw lets you fill your objects with pre-defined hatching, bitmaps, solid colors, as well as gradient colors. If you don't see what you like, you can edit the bitmaps, colors and gradients that are provided. Draw has a nice time-saving feature: it remembers the last three fill types you selected, and adds them to the drop-down menu. It also remembers the last three line widths

you specified in addition to the last nine files you opened.

Draw also has a zoom feature that lets you magnify your view for close-in editing. At maximum magnification in straight VGA (640x480), an area of about one square inch fills the entire screen. Unlike Windows Paintbrush, you won't get pixel-by-pixel editing. However, after you've experienced the power of object-oriented drawing, you probably won't miss the tedium of the pixel-by-pixel approach.

Speaking of pixels, OS/2 comes with its own pixel-oriented editor—the Icon Editor. Anyone who's used it to create icons soon comes to wish for more powerful tools. For example, the icon editor doesn't have tools for drawing circles, boxes or even text. The natural question, then, is whether or not Draw can do duty as an icon editor. The answer is yes and no. You can't save from Draw into .ICO format. However, you can create your image in Draw, copy it to the clipboard and then paste it into OS/2's own icon editor. In fact, some of Draw's clip art makes excellent icons.

Editing Prowess

Not all of Draw's skills come in the creation department. It's also very handy for editing what you (or anyone else) create. All graphic symbols have handles that define the basic object. For example, a rectangle has eight handles—one at each corner, and one in the middle of each side. You can manipulate the shape of the rectangle by tugging at any handle. What if that's not enough? Draw lets you add handles to an existing object. Suppose you draw a dinosaur, but don't have enough handles to fully extend and arch the back. No problem, just add some extra handles.

For those whose mouse-eye coordination needs some improvement, Draw lets you smooth an object. Suppose the dinosaur you drew looks a bit too jagged. No problem, use the smoothing tool to add graceful contours. The unsmoothing tool lets you go the other way. You also can convert any symbol into a series of Bézier curves (a curve with two stretch points and two anchors). This gives you the ability to mold the object into whatever shape you like.

Sometimes, it's inconvenient to have to deal with a lot of small parts. That's no problem. Draw lets you select objects and then **Group** them so they can be treated as a whole rather than individually. Later on, if you need to remove or modify one of the small parts, you can **Ungroup** them. Similarly, if you draw an unclosed object (i.e., an incomplete polygon), you can close it (or, reopen it), using the **Connect** and **Disconnect** commands.

Fonts

The Draw package says that it comes with 18 re-shapeable outline fonts. After installing Draw, in fact, the font menu in DeScribe

shows 19 additional Adobe typefaces. Nonetheless, that's better than the way some other font providers count. Some count a given type face family as up to four fonts, e.g., Times Normal, Times Bold, Times Italic and Times Bold Italic. The package says "13 fonts included" and you find that those 13 are Times Roman, Helvetica and Symbol—each multiplied by four—along with Courier. Technically, it's true: a typeface includes the full family of sizes and styles, whereas each font is a particular style and size within the typeface. To the average user, however, it's misleading and disappointing.

Fortunately, Micrografx doesn't count that way. Draw adds 19 new typeface names to your OS/2 font menu (even more show up on Draw's own list). These are added to the system fonts, and become available not only for Draw, but for any other font-hungry PM (Presentation Manager) application on your system. The Draw-added fonts were immediately usable by DeScribe, the Enhanced PM Editor, as well by desktop folder. You could fill the better part of an afternoon just playing with the possibilities. Using their Marriage font (the kind of font you see on wedding invitations), the desktop takes on a whole new look! Some of the others included are Bodini, Broadway, Cooper Black, Frugal Sans and an interesting looking one called Stop. However, you'll probably want to print out samples in the form of a typeface reference using an OS/2 word processor. Unlike the Micrografx's PM Chart application that comes with OS/2, Draw doesn't provide a font preview when you're selecting fonts.

Don't Get Bent Out of Shape

There's a lot of value packed into Draw. Even so, strong OS/2 supporters won't be entirely satisfied. For one thing, Draw is a very close Mirrors port from Draw for Windows. Micrografx Mirrors is an API translation technology that lets developers quickly move applications from Windows to OS/2. The resulting applications are usually not what OS/2 purists call "WPS aware." WPS (Work-

Micrografx Draw 3.0 for OS/2

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place Shell) awareness can mean several things. For example, with a WPS-aware program you can drag files from an open folder and drop them into an application. Try it with the EPM editor, or with DeScribe, and the file is immediately loaded by the application. Try it with Draw, and you get the international DO NOT ENTER icon. Draw's not alone,

of course, since even OS/2's own E.EXE and many of the productivity applets also flunk this test.

Less forgivable, however, is the fact that Draw isn't HPFS-aware. It can neither read nor write extended filenames. OS/2's HPFS (High Performance File System) supports file names up to 254 characters. When I tried to save a clip-art-based creation as Dinosaur Wearing Monocle, Draw wouldn't acquiesce.

Another missed opportunity is multithreading. When printing, Draw often subjects the user to long waits as the picture wends its way to the spooler. Only when it's completely spooled, does the "Wait" icon go away. Mind you, the printing quality is terrific. The images you get are far and away superior to anything you'll get from Windows Paintbrush. Smoothed drawings come out smooth. Just the same, it would be much more OS/2-ish of Draw if printing could be handled by a separate thread. Perhaps we'll see that in version 4.0?

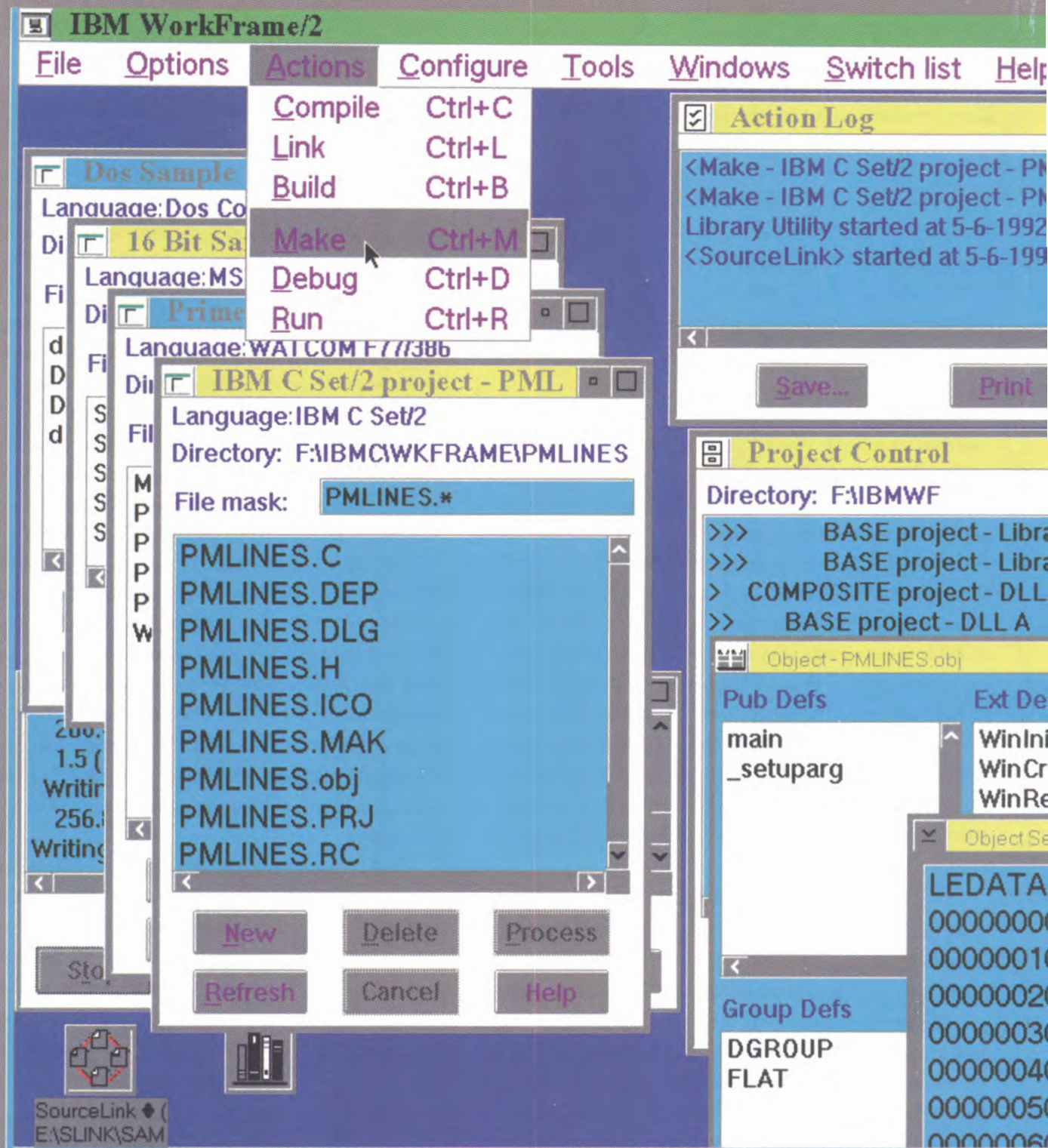
Draw reads graphics from 12 formats—Micrografx DRW, GRF and PIC, Adobe Illustrator AI and EPS, Zsoft PCX, standard TIFF, ANSI Text, CGM, GEM, Macintosh PCT and WordPerfect WPG. Missing from this list, unfortunately, are ICO, BMP and OS/2 metafiles. The list of formats to which Draw can write is even shorter—DRW (versions 1 through 3), PIC, GEM (draw and artline), CGM, AI, PCT and WPG. You can copy to the clipboard and paste into another application. However, that's not as convenient as having the additional export and import filters built-in.

Another shortcoming is the inability to edit multiple files at the same time. Given that Draw is very memory-intensive (it seems to require about 2.2 megabytes for basic operations at 640x480x16 colors, with considerably more for 256 colors), that may not be such a bad thing. However, Draw won't let you start a second instance of itself. Even when you set the window behavior to **Create Another**, Draw still won't comply.

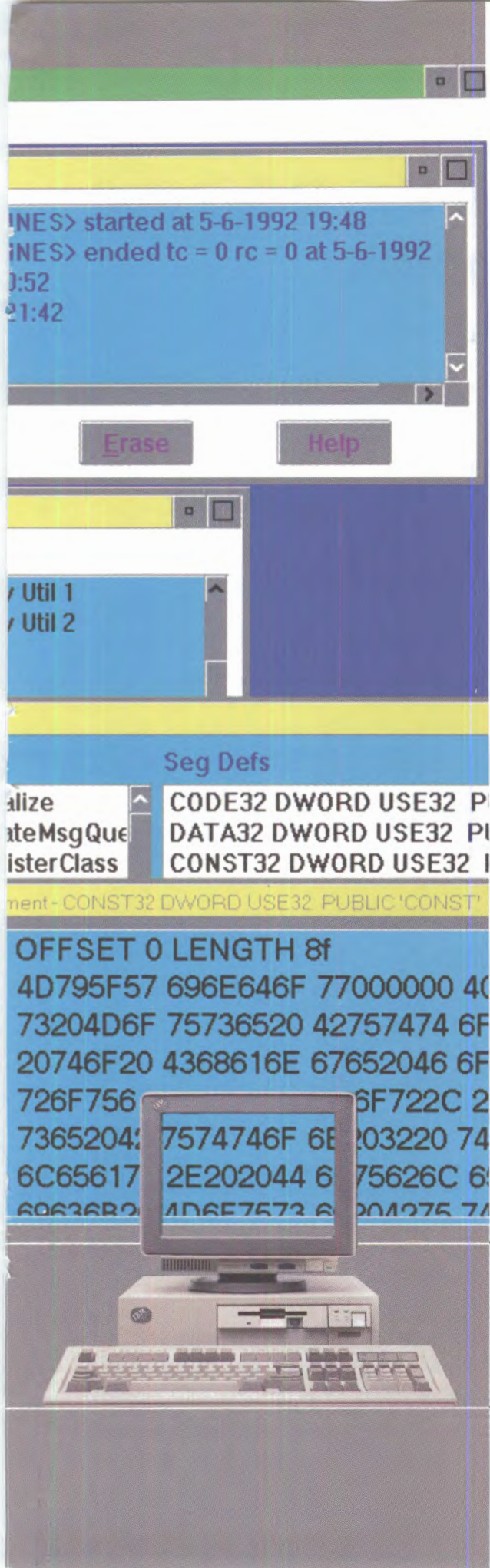
The Bottom Line

In the final analysis, despite a few ironable wrinkles, Draw comes up looking like a winner. It's a powerful and affordable drawing package that is both entertaining and productive. With it, you can create high-powered, high-quality, professional-looking graphics in a fraction of the time and cost it might take you using other available alternatives. And, let's face it, at the moment, there simply aren't very many alternatives. For all that Draw might lack, it brings a lot of extra capabilities to your OS/2 desktop. ♦

Herb Tyson is a consultant to the computer industry whose clients include IBM.



OS/2



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Circle #14

IBM

IBM Workframe/2 v1.0 & the OS/2 2.0 Developer's Toolkit

REVIEWED BY TODD B. CROWE

For developers wishing to write software for OS/2 2.0, IBM has provided the Developer's WorkSet/2. IBM C Set/2, a C compiler and debugger for OS/2 which was reviewed in the premiere issue of *OS/2 Professional*, is one of three parts of the IBM Developer's WorkSet/2. The other two parts, IBM WorkFrame/2 and the OS/2 2.0 Developer's Toolkit, are the focus of this review. WorkFrame/2 is an integrated development environment (IDE) for C Set/2, the Developer's Toolkit and other IBM and third-party development tools. The Developer's Toolkit contains a 32-bit linker, import libraries, OS/2 2.0 system header files and other tools necessary for developing OS/2 2.0 applications.

WorkFrame/2 is packaged as a set of two short manuals and a single (3.5") disk which installs in approximately 2.2MB of disk space. The Developer's Toolkit comes on nine (3.5") disks and includes three separately installable sets of software: development tools (8.9MB), online information (7.3MB) and sample programs (7.7MB). Three of the Developer's Toolkit's disks include a kernel debugger, a debug version of the OS/2 2.0 kernel, a debug version of Presentation Manager and symbol files.

WorkFrame/2 v1.0

WorkFrame/2 is a 32-bit, Presentation Manager (PM)-based IDE. WorkFrame/2 insulates OS/2 developers from command-line drudgery by providing a graphical shell that integrates the PM and text-based tools used in development work (compilers, editors, debuggers and so forth). When WorkFrame/2 is used as a front-end for C Set/2, the compiler options are graphically represented through a set of dialog boxes. And integration with the

Developer's Toolkit makes WorkFrame/2 an easy-to-use launching pad for many of the tools in the kit. Other features of WorkFrame/2 include project control, a make file creation utility, online help and IBM's excellent product support.

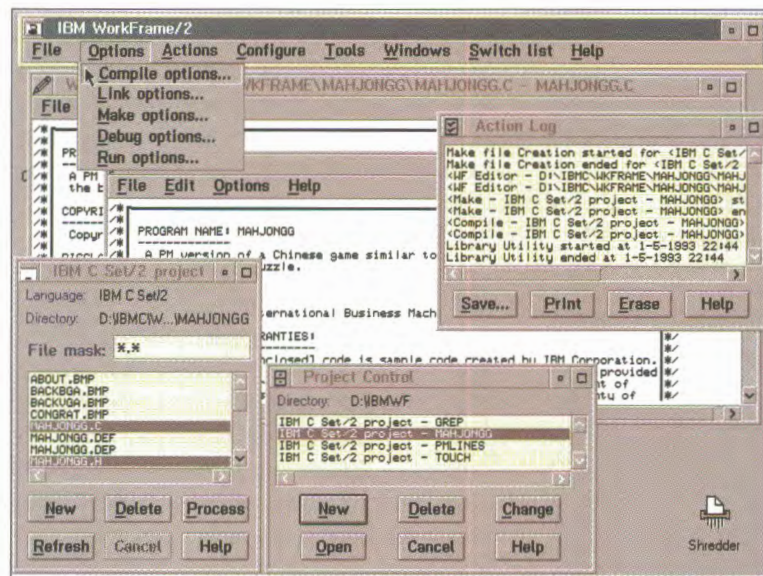
WorkFrame/2 can simplify the tedious task of learning and using command line options by hiding the details under the covers of easy-to-use dialog boxes. This is one of WorkFrame/2's nicest features. Consider the C Set/2 support mentioned previously. Instead of having to look up and use what are often incom-

prehensible compiler switches, the WorkFrame/2 user simply selects a menu item and then chooses options from a dialog box. Each option is presented as a short text description. If this is not descriptive enough, online help is one click away—giving the user a more complete description of the option.

These graphical dialogue boxes are available to other tools as well. WorkFrame/2

includes full support for the linkers (both the default OS/2 linker and the 32-bit linker included with the Toolkit). Generic dialog boxes provide support for a make utility, a debugger and default target application run-time options. You can add basic support for other tools by simply selecting an item from the WorkFrame/2 pull-down menu and entering information (e.g., path, default arguments and so forth) in a dialog box.

The development process typically involves a cycle of editing, compiling, linking and then testing the target application. In a command-line environment, entering commands for each step of this development cycle can be very tedious (even when using a make utility). This is another area where the IDE provided by



WorkFrame/2 can help. Using WorkFrame/2, the development cycle typically involves two fundamental steps. First, changing and saving the source code in an editor, and second, selecting a make or build option from the WorkFrame/2 pull-down menu. Of course, the user also has the option of a simple compile or link (as opposed to a complete build). Once the target application has been created, menu options are available to run the application stand-alone or from within a debugger.

Project control is another feature of WorkFrame/2 which can ease the development process. Many applications are composed of several separate pieces; for instance, even fairly simple OS/2 applications often consist of an executable file, one or more dynamic link libraries (DLLs) and a help file. WorkFrame/2 uses projects, which represent each of these pieces and the application as a whole, as the units of work.

Each application developed with WorkFrame/2 must be composed of one or more projects. A project may be a base project or a composite project. A separate base project is typically used for each part of the application (e.g., one for the executable, one for each DLL, one for the help file and so on). Each base project may contain its own set of options—compiler, linker and so forth. Then, you can create a single composite project to coordinate all of the base projects. Unfortunately, using projects under WorkFrame/2 entails some problems that make projects difficult to use. For example, all of the files within a base project must be within the same directory.

Once you have set up a project, you can create the target by simply specifying the source files and selecting the **Build** command from the WorkFrame/2 pull-down menu. WorkFrame/2 uses built-in rules to determine how to create the target.

To further aid the build process and manage file dependencies, WorkFrame/2 has a built-in make file creation tool. You will find make file creation both quick and simple when using this tool: select files from the project file list to use as sources, select a set of actions to be accomplished by the make file (e.g., compile, link, resource compile and IPF compile) and start the tool. The make file creation tool automatically generates the make file, including any dependencies. The tool has one serious flaw: it can only generate new make files (i.e., it cannot be used to update old make files).

WorkFrame/2 is generally very simple to use, and as with the other two pieces of WorkSet/2 it includes online, context sensitive help. Technical support for WorkFrame/2 is, of course, available from IBM. IBM has also recently released two new packages of

software for WorkFrame/2. One is a library manager for object modules (CSD #CS00003). The other is a set of documentation and examples on how to write applications and extensions which interface with WorkFrame/2.

OS/2 2.0 Developer's Toolkit

The OS/2 2.0 Developer's Toolkit is a set of tools, online documentation and sample programs which OS/2 developers can use to create OS/2 2.0 applications. The Developer's Toolkit also includes debug versions of the kernel and PM which developers can use to help write OS/2 device drivers and Debug PM applications. (See the Bookstax review of *Writing OS/2 2.0 Device Drivers in C* page 65.) These parts of the Developer's Toolkit are briefly described below.

Development Tools

The tools included with the OS/2 2.0 Developer's Toolkit include: a 32-bit non-segmented linker, 16- and 32-bit import libraries, an import library utility, C and assembler include files, editors for icons, fonts and dialog boxes, a resource compiler, an Information Presentation Facility (IPF) compiler, a System Object Model compiler and other utilities.

The OS/2 2.0 base product includes a linker. However, this linker will only produce 16-bit segmented executables. To create true 32-bit applications, programs must be linked with a 32-bit linker like the one that comes with the Developer's Toolkit. The linker has many of the same features and options as the normal OS/2 linker, but can link applications for the flat memory model available in OS/2 2.0. OS/2 applications which use DLLs or any of the OS/2 Application Programming Interfaces (APIs), such as Dos-, Gpi-, Win- and so forth) must be linked with special import libraries to resolve the API calls to addresses within the OS/2 system DLLs. The Developer's Toolkit includes import libraries for both 16-bit and 32-bit interfaces. It also includes a library utility which can be used to create import libraries for newly developed DLLs.

If you are writing applications that use the OS/2 APIs, the Developer's Toolkit contains all of the necessary include files. You will also find include files that describe such things as the layout of 16- and 32-bit executable file headers. The toolkit has two sets of headers to support both C and assembler.

The Developer's Toolkit contains several important editing utilities including an icon editor, a font editor and a dialog editor. The icon editor is the same one that comes with the OS/2 base product. The font editor can be used to create bitmap fonts like the ones included with OS/2. While these two editors are handy utilities,

the real gem is the dialog editor. With this utility, you can create dialog boxes in a WYSIWYG environment. Nearly all of the controls that can be put in a dialog box are supported. The dialog editor is very similar to the one in the Microsoft OS/2 Presentation Manager Toolkit (for OS/2 1. x) but with some nice added features such as a graphical tool bar. The dialog editor saves dialogs in both source, which can be edited as plain text, and compiled formats.

A resource compiler also included in the Developer's Toolkit can be used to compile the source resource files.

The source for online help and documents is written in a tag language. The tag language is then compiled into a format that is recognized by the IPF. This tag language compiler is yet another part of the Developer's Toolkit. Online help and documents which use the IPF are generally quite easy to write and may use such features as hypertext links,

help for all of the tools in the Developer's Toolkit. The information in the online documentation and help is well organized and easy to reference.

Sample Programs

The Developer's Toolkit includes 31 programs which developers may use for examples. Some of the topics covered in the example programs are: creating a DLL, writing multithreaded applications, dialog boxes, named pipes and semaphores, SOM, IPF, REXX and physical and virtual device drivers. To help explain the important concepts of each, all of the example programs are documented.

Debug Kernel and PM

For many developers the debug kernel and kernel debugger will not be necessary, but for OS/2 device driver writers they are indispensable. The kernel debugger (in conjunction with the debug kernel) allows a developer to set breakpoints within applications, device drivers and even the kernel itself. The debugger can single step through code and change memory and register contents. With symbol files installed the debugger can symbolically display memory references. The kernel debugger is not a source level debugger, it can only display code as assembly language. The kernel debugger (and Debug PM) require a terminal connected over a serial port.

While the kernel debugger is primarily useful for device driver developers, Debug PM is more useful to application developers. When PM detects and returns an error, the error message is also displayed on the external debug terminal. This is often convenient when access to the full screen is required during program execution (without interference from the debugger or other tools that might alter the appearance of the Workplace Shell). Unfortunately, the information output to the debug terminal is often very limited.

Summary

The integrated development environment provided by IBM WorkFrame/2 effectively hides much of the tedium of using command-line-based development tools. The utility of WorkFrame/2 is lessened, however, by a number of flaws that make it more difficult to use than it should be. The OS/2 2.0 Developer's Toolkit provides an indispensable set of tools to a wide variety of developers. The OS/2 2.0 Developer's Toolkit is highly recommended. ♦

Todd Crowe is a UNIX/UNICOS kernel developer for Cray Research, Inc. He has been programming for OS/2 since April 1989.

IBM Developer's WorkSet/2

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multiple fonts and different types of highlighting, graphics, application controlled windows and dynamic data formatting.

One of the most important new features in OS/2 2.0 is the Workplace Shell and the System Object Model (SOM). The Developer's Toolkit includes a SOM compiler which allows developers to use the SOM with their applications. Currently, the SOM compiler comes with bindings for only the C language.

Some of the other development tools included with the Developer's Toolkit are a utility to provide quick access to online help from within editors and other applications, utilities to modify and examine executables, a utility to create symbol files for the kernel debugger and an nmake utility.

Online Information

Just having the tools to write OS/2 applications is not enough. An application developer also needs documentation which describes how to use the tools and the OS/2 APIs. The OS/2 2.0 Developer's Toolkit contains all of the reference documentation a typical application developer will need. The Toolkit includes complete references on the Control Program interface (Dos- API), Presentation Manager, SOM, IPF and REXX. You will also find online

continued from page 9

Filling a void

I would first like to congratulate you and your staff for an outstanding first issue. I can't tell you what a pleasant surprise it was to find your magazine in the mail yesterday. After I read my email for the day, I picked it up to thumb through it and I didn't set it down until I had read the last page. This is exactly the publication I have been looking for. And it came to ME. How delightful.

When I first switched to OS/2 I was hungry for information. I couldn't read enough about it. OS/2 is not shipped with a large amount of documentation (other than the extensive online info). To fill this information void, I turned to my good friends in the computer trade press. I was completely disheartened by the lack of articles about this wonderful new tool I had. Certainly others were using it. It was (and is) the most powerful operating system on the market today.

So I asked myself, "Where are the articles?" And I got no answer. Until I received your wonderful publication in the mail. It has exactly the kind of information that I require: reviews of application software. Your review of the DeScribe 4.0 SE word processor was especially informative. New product information: for instance the profile on Lotus and their new 32-bit apps for OS/2. Hints and tips: your TNT section will be a big help to new and "veteran" users alike. And interesting articles about what is new in the computing arena. The articles "Computer Warfare" and "Image and Vision for Business" were particularly entertaining.

I am sending in my subscription card to you today. I can hardly wait for your next issue. Until then I'll just have to continue to receive the bulk of my OS/2 news and information by way of electronic mail conferences.

I wish you continued success.

Larry Tubbs

*Enigma Consulting Services
Euless, TX*

Bravo! I was recently given a copy of the debut issue of *OS/2 Professional*, and I feel you and your staff should be congratulated.

Our next generation of the Flight Operations System (FOS Version 2.0) is being developed to run in the OS/2 environment. While we at CTA are very excited about OS/2 2.0, many of our customers and prospective customers know very little about it. Understandably, some are skeptical. For that reason, I am faced with not only selling our software, but selling OS/2 as well. *OS/2 Professional* has already proven to be a valuable resource to me, and I look forward to receiving your next issue.

Dale G. Fulk

*Marketing Manager, CTA, Inc.
Charlottesville, VA*

A great start

Congratulations on an auspicious beginning for your new publication. I won't tell you that the world needs good OS/2 publications both because it's self-evident and because you obviously know it already. My subscription will be arriving under separate cover.

So the rest of this letter will have to do with picking a nit in Mr. Crowe's review of C Set/2. Let me say right away that I rather agree with his overall impression of the online reference, but I must take issue with his specific comments:

"...function **time()** returns the current calendar time, but nowhere does it say that it returns the number of seconds elapsed since 00:00:00 Greenwich Mean Time (GMT), January 1, 1970. Nor does it say that the argument type **time_t** is a **typedef of unsigned long**."

Well, perhaps the de facto Unix standard is all that Mr. Crowe says it is, but in Standard C, the value returned by **time()** is in fact of an unspecified arithmetic type, and its encoding is unspecified. It would, in fact, be a serious error if the reference specified the details about whose absence Mr. Crowe is so unhappy, since the SAA standard is based upon

Standard C, not the oddities of Unix custom. There are plenty of legitimate errors and omissions in the online references, so it's really a shame to see them criticized for something they got entirely right!

Martin J. Maney
Palatine, IL

Thank you for a wonderful magazine! It's a breath of fresh air to have a computer magazine with such variety and (just as importantly) not chock full of inserts, foldouts and pullouts.

I found *OS/2 Professional* much like an airline magazine—by that I mean it got me to think about things in different ways. The topics were diffuse (Vol. 0, No. 0 had reviews, editorials, essays, biographies, profiles, tips and many more), the language was conversational and the layout was peaceful. No garish 50-color ads, no bashing, no band-wagging, just sensible stuff.

My favorite article was "The Future of OS/2" by Edwin Black. I am a DOS, Window and OS/2 user, and I particularly agree with Mr. Black's statement that OS/2 "actually helps [users] relax." I've found that using OS/2 means much less frenzy, and the less frenzied I am, the more productive I am. And I don't worry about crashes, disk fragmentation, memory optimization or anything else—OS/2 takes care of it for me. Reminds me of the mainframe days when computer users worried about their task at hand, not the stability or performance of the platform.

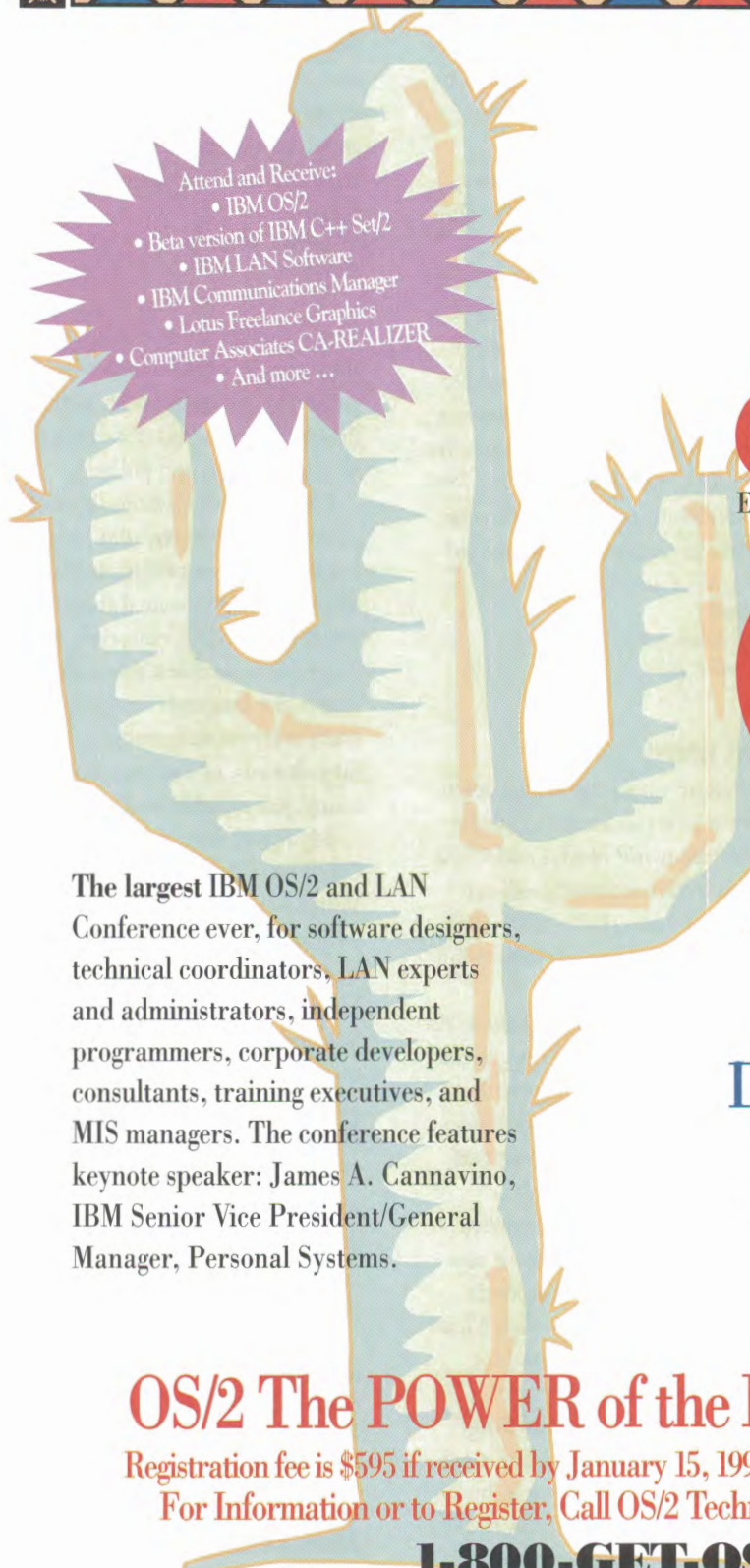
Thanks again. Looking forward to the next issue!

Chris Niggeler
*Sophia Systems
Palo Alto, CA*

More congrats

OS/2 Professional is the greatest thing to hit the streets since OS/2. I really want to commend you on a job well done. Your publication is needed.

continued on page 78



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MOBILE '93

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Mobile '93 is a conference, to be held at the San Jose Convention Center, organized by Richard Shaffer at Technologic Partners. Shaffer is famous for his unique newsletter, *ComputerLetter*. Top speakers at the event will be John Sculley, CEO, Apple; Bruce Claflin, general manager, Mobile Computers, IBM; Kathy Vieth, vice president, Tablet Systems, IBM; and Bob Kavner from AT&T. Also look for some surprises at the expo vis-à-vis new mobile computing products. Personal communicators, digital assistants, wireless messaging, information appliances, pen computers, nomadic networking, palmtops and subnotebooks will be shown. Conference & expo, \$795; expo only, \$20.

Contact: Technologic Partners, (212) 696-9330.

FEBRUARY 21-24:

1993 PC FORUM

Phoenix, AZ

Esther Dyson, a top computer luminary, is staging the 1993 PC Forum in the Arizona Biltmore, Phoenix, the exclusive five-star resort designed by Frank Lloyd Wright. With speakers ranging from IBM's James Cannavino to Taligent's Joe Guglielmi and Interval

Research's David Liddle, Dyson's conference is well-known for drawing the top CEOs as well as the most brilliant computer minds of the industry. PC Forum will be showing sneak previews of new technology and showing products in use at the conference to plan schedules, such as Lotus Notes and maps and restaurants with ZAGAT-AXXIS CityGuide. This year's theme is "Content Is the Key." Dyson says software is not an end in itself, but a medium for information and communication. It may also be the best schmooze-fest and brain-fest on the circuit.

Contact: Daphne Kis, EDventure Holdings, (212) 758-3434.

FEBRUARY 28-MARCH 3:

IBM OS/2 TECHNICAL INTERCHANGE

Phoenix, AZ

The place to be for cutting edge information on the accelerating OS/2 market is IBM OS/2 Technical Interchange at the elegant Pointe Hilton at South Mountain, Phoenix. Everyone who's anyone in OS/2 will be there—almost. Keynote speaker will be James Cannavino, IBM senior vice president and general manager, Personal Systems. The OS/2 Technical Interchange promises to be the largest IBM OS/2 and LAN conference ever, with software

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Make sure you join us for breakfast, 7:30 AM, Wednesday, March 3, sponsored by *OS/2 Professional*. Meet the editors and have a non-technical interchange.

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Contact: CT Meeting Planners, (800) 438-6720; outside U.S. (203) 261-6227.

MARCH 3-7

SOFTWARE PUBLISHER'S ASSOCIATION

San Diego, CA

The Software Publisher's Association (SPA) conference is a fun conference to attend. Held at the wonderful San Diego Marriott Hotel, events include the Excellence in Software Awards, 5K run and golf and tennis tournaments. The

conference is geared to emphasize sales and marketing, as well as consumer electronics and computer law. Of the three SPA conferences held yearly, the San Diego event is the best one to attend. Anyone who knows the twin towers of the San Diego Marriott knows that the sleek structure sits astride the harbor, sports a great pool, offers majestic vistas from its balconies and offers a sumptuous Sunday brunch.

Keynote speakers will be Philippe Kahn, Borland, and Joe Guglielmi, Taligent. Registration fees range from \$700-\$1,125, depending on SPA membership.

Contact: Karen Johnson (202) 452-1600.

FEBRUARY, MARCH '93

OS/2 HITS THE ROAD

IBM's OS/2 Tour '93 has announced a series of half-day seminars for the first quarter of 1993. Program coordinators say the conferences are designed to enhance the visibility of OS/2 by promoting it to small business interests. Two different three-hour seminars are available, depending upon experience level.

Level 1 covers: Workplace Shell, graphics, multitasking, as well as DOS, Windows and native OS/2 applications.

Level 2 covers: Lan Server, Novell, Database Manager, Communications Man-



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Nashville, March 24-25;
Denver, March 31-April 1.

Contact: OS/2 Tour '92
Registration, (800) 424-4344.

MAY 24-27

COMDEX/SPRING '93

Atlanta, GA

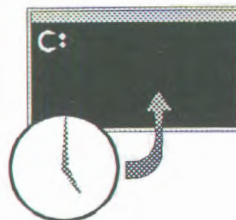
More than 75,000 people are expected to jam the Georgia World Congress Center for the annual Spring COMDEX. That includes

some 4,000 international delegates. More than a thousand firms will be hawking their wares and hoping to arouse your interest and wallets. Among the expected technical accents will be OS/2, UNIX and Open Systems, networking, multimedia, mobile computing and channel distribution. The event is cojoined by Windows World '93 sponsored by Microsoft.

Contact: The Interface Group, (617) 449-6600. ♦

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Circle #29

OS/2 a



and SQL at your service

OS/2 and database servers are a key to the success of the operating system—and the corporations investing in it.

BY WAYNE RASH JR.

A friend once described OS/2 as the Rodney Dangerfield of operating systems. "It just don't get no respect," he said. In some cases, he was right. There are many who still hold OS/2 in low regard. Oddly enough—or perhaps as you would expect—those who actually work with it are rarely among them. For users who actually use OS/2 for mission-critical applications, OS/2 gains a lot of respect indeed. And one area in which OS/2 gets the most respect is database servers.

In the realm of databases, OS/2 has become a standard platform for several vendors, including Microsoft and Gupta Technologies. Microsoft and Gupta are important, because they are two of the largest vendors of OS/2-based SQL database servers; because they were instrumental in the growth of OS/2; and more significantly in legitimizing the role of SQL database servers in the industry.

Change looms on the horizon, however. While OS/2 has a solid place in the world of server platforms, it is not unchallenged. Microsoft, seller of the top selling SQL Server, is *maybe-we-think-possibly* bringing out Windows NT by the summer of 1993. NT is intended to challenge OS/2 directly, as well as to fit roles where OS/2 cannot possibly go. UNIX, on the other hand, still finds acceptance with minicomputer and mainframe users, if simply because they're used to it.

Still, because Microsoft plans a challenge to OS/2, it hardly means that the company expects IBM's product to vanish. Microsoft is ready for a contender match. "OS/2 is well suited for a database server platform," says Gary Voth, Microsoft's senior product manager for client/server applications. "OS/2 offers preemptive multitasking, protected application memory, virtual

memory in addition to high reliability," Voth asserts.

Voth contrasts OS/2-based SQL platforms with those based on Novell Corporation's popular NetWare Loadable Modules, which allow database server software to reside on a Novell NetWare file server along with the network operating system. "NetWare is not a suitable platform for applications in a production environment," Voth says. He notes that the NetWare operating system is designed so that it is not protected against problems caused by applications. "A crash could take down the whole network server if an application fails," he notes.

Some developers believe that OS/2 is leading other operating systems in potential when it comes to database development. Ron Wolf, director of product management for Gupta Technologies in Menlo Park, California, says that OS/2 is especially valuable when it comes to developing object-oriented database products for servers. "OS/2 is leading [Microsoft's] NT in object-oriented databases," says Wolf. He notes that Gupta is planning an object-oriented database for OS/2 database servers.

Wolf also isn't worried about changes that might be coming in the OS/2 marketplace. He notes that OS/2 is more client oriented than Microsoft's NT. "We have a local OS/2 database," Wolf says, explaining that OS/2's multitasking allows users to have what is essentially a database server on their own machine. He also said that Gupta Technologies expects to see peer-to-peer databases in the near future.

Of course, software companies can plan what they want for the database world, but unless they get their local integrators to play ball, they won't have the impact they want. "Up until now, there

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Circle #34

CONNECTIVITY

haven't really been any applications for SQL Server or products like that," says Curt Yee, president of Systems Group, Inc., of Honolulu. Yee says that without applications only users who plan to program on their own can benefit from database server technology. Yee says that his company has been training other developers for most installations. That is changing, though, he notes. "Platinum recently came out with a SQL Server version of their accounting package," Yee explains.

Yee also noted that requirements for OS/2 database servers is growing in vertical markets, such as in image databases; and that both Imara and Saros use Microsoft's SQL Server as the database for their image management systems.

There are other vertical applications besides imaging. Yee says that in Honolulu, SQL Server and other OS/2 database server applications are being used in a wide variety of ways ranging from law enforcement to agriculture. "One of Hawaii's largest agriculture firms is using SQL Server with its applications for crop yield studies and crop yield planning," he reports.

The reason for the system's popularity is simple, according to Microsoft's Voth. "OS/2 offers a cost-effective and reliable platform for delivering multiuser platforms in any environment," says Voth. The requirements are growing, he notes, "and people don't usually stop at the database server. They want to add applications, services, tools and so forth." Voth readily confirms that OS/2 makes this easy to do, especially compared to other systems.

Of course, OS/2 does have its challengers, not the least of which is Microsoft itself. Voth says that one of the problems with OS/2 that NT overcomes is scalability. "OS/2 is great on single processor Intel hardware," Voth says, "but sometimes there's a capacity issue."

Voth thinks that some users might look to NT or UNIX if their needs for performance can't be met by OS/2. There are problems there, too, Voth notes. "UNIX is hard to administer, it can be intimidating to users and it doesn't always integrate well with PC networks." Voth then notes that both NT and OS/2 fit those requirements. For that reason, Voth clearly believes that most OS/2 users are satisfied with the operating system they chose for their servers. "There's not going to be any mass migration off OS/2 servers," Voth adds.

CONNECTIVITY

Clearly, OS/2 is growing as the platform of choice for SQL database servers because it performs well and is easier to use than the other alternatives. Part of this is because OS/2 presents an interface with which people are used to dealing. Both Novell NLMS and UNIX database servers are difficult to use, and even more difficult to install.

Of course, there are problems with OS/2. You can't scale an OS/2 server beyond a certain point. UNIX database servers can be essentially any size at all, from PC size up to something that would run on a Cray. On the other hand, most users don't need to run their database server on anything that large. On still another hand, Windows NT, isn't exactly here yet. So while NT may turn out to be easily scalable, it will be a while before that happens. In the meantime, OS/2 is here and it works. More important, using an OS/2 database server helps companies protect their investment in database applications and design.

Because OS/2-based database servers will also run on Windows NT, when it is launched, and because most OS/2 databases also have UNIX equivalents, relatively little effort is required to move to something larger later, if you outgrow your current OS/2 platform. At that point, you can still move to NT or UNIX and preserve nearly all of your investment, while keeping costs low now.

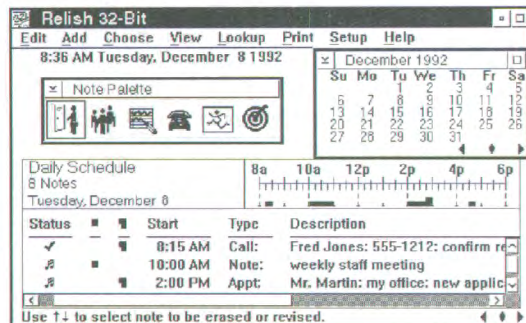
There are changes coming for OS/2 as well. These changes may make a move from OS/2 just for growth unnecessary. The peer-to-peer databases that Gupta Technologies' Wolf mentions may turn out to be the basis for a truly distributed database—one in which the network itself becomes the computer, and in which your data can exist anywhere on the network. While Gupta isn't saying exactly what it has in mind for new developments, there's no indication from what they hinted that OS/2 is on the way out. In fact, the indications are that it's well on its way in, at last. And so, finally, OS/2 will get some respect. ♦

Wayne Rash Jr., is editor of *The Washington Post Computer Showcase*; contributing editor for *Corporate Computing Magazine*; columnist and contributing editor for *Communications Week* and consulting editor and Washington correspondent for *BYTE Magazine*. He is also co-author and author of many books on local area networking.

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MULTIMEDIA

Reality Realty

It won't be long before executives and even average consumers will be able to explore every facet of a prospective new home and community without ever leaving an office.

BY HANK KLIEWER

Moving to Minnesota meant a combination of excitement about a new job assignment, and dread at the prospect of spending long hours hunting for a new home. I was expecting a lot of relief when my friend Tom, a realtor, smiled and invited me to his office.

At Tom's place, I fully expected to page through the usual listings. But instead I was ushered into a conference room to a chair near what looked like a TV screen. "Let me show you a starter home," Tom said. Before I could protest that I wanted something more than a starter home, he pressed some sort of control that brought up a huge home in a park-like setting. "Whoa," I said. "That may be a starter home

for an oil baron, but I can tell you right now—that is out of my league." Tom laughed and explained that this was the start of a multimedia home tour. I leaned forward while pointing to the ornate front door of the



MULTIMEDIA

house. To my surprise the door opened. The image on the screen changed to show me a view of the entry as seen from the open door. "How did you do that?" I asked.

"I didn't do anything," Tom answered. "You actually touched the screen and immediately began a tour of the home starting where you touched the screen."

That seemed simple enough, so I touched an arched entry. Once again the scene changed so that I viewed the next room. It looked like a large family room with a fireplace to one side and a large window on a side wall. I touched the window. The next scene of a fountain and pond with a wooded backdrop revealed the view from the window.

Tom called my attention to some symbols (icons) along the borders of the scene. "You haven't seen the ceiling of this family room," he said. "This icon (a child looking up) lets you see what is above you."

He was right. The vaulted ceiling was accented by a crystal chandelier. I tried a few more icons and before I knew it, I had climbed the stairs to the second level, enjoyed the view from the balcony, and seen all rooms on both levels plus the basement. Amazing! All I had to do was touch a doorway, window or stairway to move from room to room and floor to floor.

"Now that you have the hang of it," Tom said, "it's time to do some serious house hunting."

"You're trying to spoil the fun," I said.

"Just touch that map icon and quit your complaining."

I complied and was greeted by a map of North America.

"Do you think you can spot Minnesota?" Tom asked.

I didn't answer, just gave him a stare right out of a northern Minnesota winter, and dutifully touched the appropriate area on the map. By this time I knew what to expect. The map zoomed in on Minnesota and with successive touches homed in on Rochester, Minnesota.

"Now what do I do?" I asked.

"You need to tell the computer in what kind of home you are interested. That icon in the upper left corner presents a list of questions to determine your requirements."

I started answering questions as they were presented on the screen. When I chose low energy costs, the computer showed me my choice together with an earlier choice for a heated garage and asked, "Are you sure?" I wasn't about to argue with the computer on that subject so I scratched the heated garage from my list and continued. I was given an opportunity to review my "wish list" of requirements, made a few changes and then leaned back to let the computer find candidate homes.

In just a few minutes the screen showed me nine small pictures of homes that were selected based on my requirements along with a message indicating there were four more that met the require-

ments and 23 more that were missing only one requirement. I quickly looked at all 36 reduced-size views, and then touched the screen on a few to see a full-screen view. Some of the homes didn't appeal to me at all, so I deleted them from the list. Soon, I pared the collection down to 10 homes that looked promising. Then I started touring the 10 homes in detail. I "walked" in the front door, visited all the rooms, saw the view from windows, decks, patios and balconies. I looked at the furnace, water heater and appliances.

One home that caught my eye, and my interest in energy efficiency, was a two-story earth-sheltered home. It was set back into a south facing slope with lots of large windows facing south. The energy cost for heating and air conditioning was listed at \$250 to \$300 per year. I had spent that much in just a single month in a warmer climate than Minnesota. So, I toured this house in detail: entering through a double airlock entry into a large room with a combined living, dining and setback kitchen area. A hallway off this great room led to two bedrooms and a laundry/utility room. The master bedroom was on the opposite end of the great room with its door near the base of a stairway with a heavy oak banister.

The stairway ascended to the upper level. At the top of the stairs were two doors. One led to an upstairs family room and a dark room for photography, and the other door led to the upstairs garage. The garage was large, enough for four cars plus adequate storage and workshop space. I had to check. No, the garage was not heated. A quick tour around the outside of the home revealed that it was earth sheltered on three sides with only the south side exposed to the sun. All those south facing windows must have something to do with the low energy bill.

"Well, Tom," I said, "this has certainly been an eye opener for me. I would never have had the patience or the time to actually look at 36 different homes." I not only toured each home of interest, but also viewed the setting of each home on its street and immediate surroundings. Touching a couple more icons gave me a printed picture of each of the homes I was interested in, along with relevant information about each. Indeed, I had looked at 36 different homes in the space of less than an hour—and actually enjoyed it! My short list now had six homes that I would physically visit on my next trip to Rochester.

Now for the truth. I didn't actually shop for my home like this. I only wished it had been possible. I expect that multimedia will make this dream come true in the near future. Multimedia is already being used in the realty business, but given current limitations on image storage and image transmission times, the applications are limited to a smaller market than depicted in my home buyer's dream. With the rapid changes taking place today in optical transmission, image compression and massive storage technol-

MULTIMEDIA

ogy, the day may be rapidly approaching when the scenario above will become reality—a day when you and I can effortlessly search for a new home or commercial property anywhere in the world.

Think about the advantages of such a multimedia system—not only in the home market, but in commercial real estate as well. There are significant advantages to both the seller and the buyer. Time is an important factor. In any real estate search there is an enormous amount of time spent in simply screening the available properties before serious detailed inspection takes place. Cable channels, site videos and four-color brochures just can't compare.

I am not suggesting that multimedia can replace the detailed site inspections. But multimedia can significantly reduce the time and energy spent in the screening process to eliminate the properties that don't fit the bill and narrow the search down to the most likely candidates. The seller can present property under the best conditions. Weather, operating schedules, working schedules and other environmental impediments are not a problem. The buyer can control the property tour, revisiting points of interest or concern in a brief period of time. Alternative choices can be compared quickly without the need for travel and appointments.

The future of multimedia is full of potential for business, real

estate being only one of many business areas. At this stage it is important for those who develop multimedia applications to understand what the end user needs and match today's hardware capabilities as closely to those needs as possible, while keeping one eye trained on the long-term objectives.

Will 90 percent of the real estate agents be able to take the pictures needed to compile the image data base required to produce the kind of product described above? Will that same agent be able to define the links that connect the touch sensitive doorways, window, stairways and so forth to the next logical view? The authoring tools that collect such image data must be easy to use if we expect to see every home and commercial property in an international real estate image data base. The job will never be done right without the direct involvement of the agents who list and sell the property. And clearly a whole industry of service bureaus and production consultants is in the offing.

In my crystal ball I see a rewarding career path for those application developers who catch a vision of what can be today as well as for what can be in the future in reality realty. ♦

Hank Kliever is a PC and AS/400 consultant and owner of Rochester Systems Advisors, Rochester, Minnesota.

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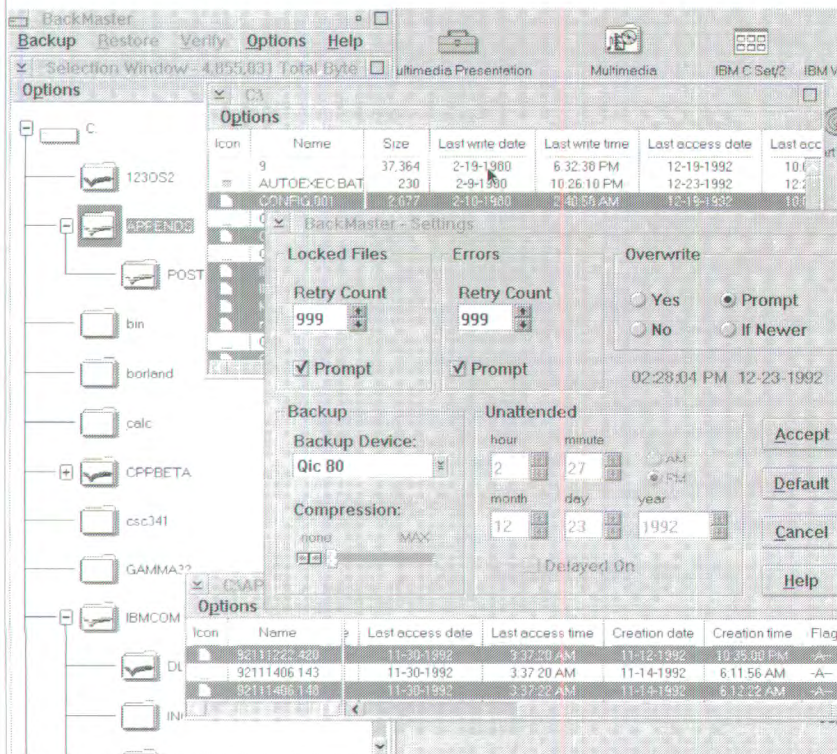
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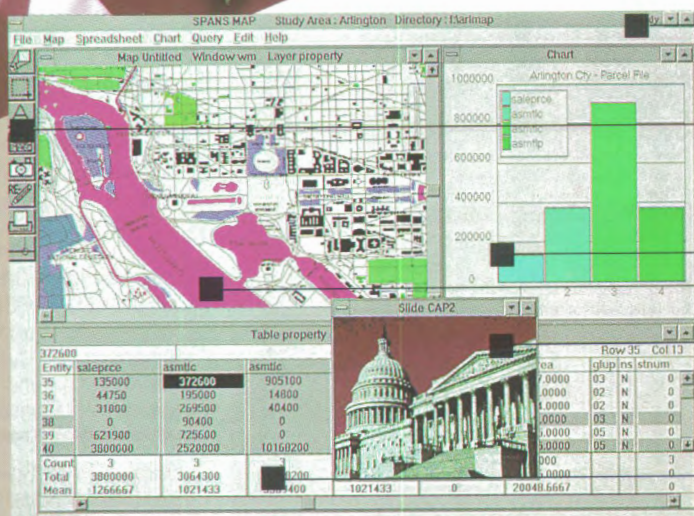
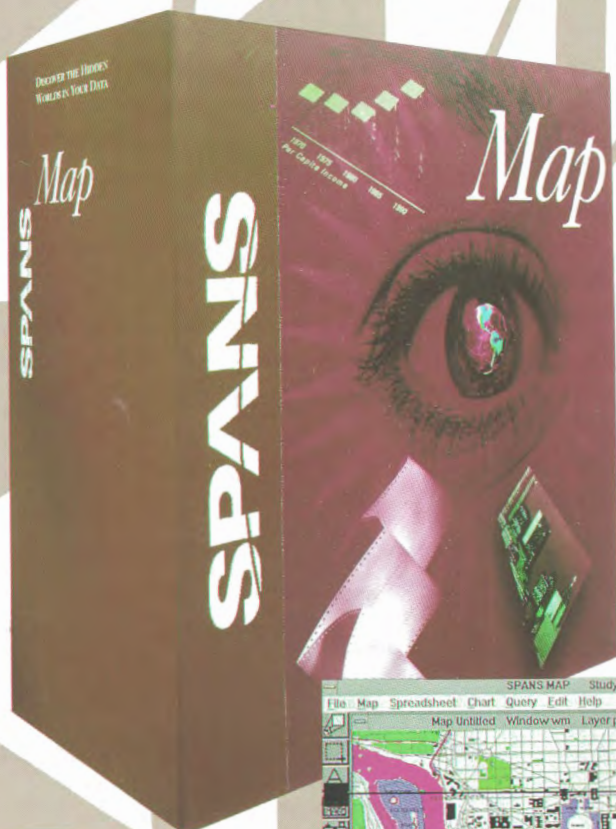
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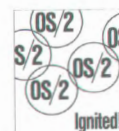
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Circle #40

Add a Little Color to Your Life With Lexmark's Latest Printer

BY BRADLEY DYCK KIEWER

If you're looking for a way to beef up your business presentations, the Lexmark Color Jetprinter PS 4079 may give your charts and graphs that extra pizzazz. Unlike traditional low-end entries in the color ink jet market, the Color Jetprinter includes Color PostScript (a printing language that lets most OS/2- and Windows-based applications take advantage of a printer's graphics and font handling capabilities). While the inclusion of PostScript adds to the cost of any printer, many users will find it worth the extra expense.

PostScript is a relative newcomer to the color market. Many businesses still use color plotters to produce color graphics. These plotters typically use a language based on HPGL (Hewlett Packard Graphics Language). Lexmark's Jetprinter includes an HPGL-compatible language that Lexmark calls Plotter GL. With it, you use the Jetprinter as a plotter without the hassles of a plotter—dried-out pens, hand-fed paper and limited color selections.

Up and Stumbling

Installation was about as trouble free as you would expect under OS/2. The operating system itself is not particularly user friendly when it comes to printer installation (reportedly, OS/2 2.1 will simplify the process). At first, it appeared that Win-OS/2 could not use the drivers supplied by Lexmark. However, a call to Lexmark technical support soon resolved the problem. Apparently, Win-OS/2 can make invalid entries within its own WIN.INI file (such as defining too many external drivers for a PostScript printer). After removing a few external definitions, Win-OS/2 properly recognized the Jetprinter.

Connecting the Dots

The printer has a base resolution of 360 dots per inch (dpi), slightly better than the 300 dpi base resolution of most laser printers. But printer technology has not stood still. Many newer laser print-

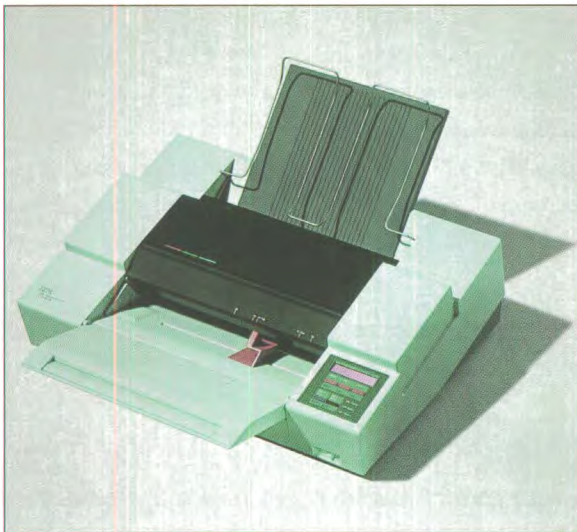
er models have implemented methods that enhance the base resolution. There are two basic techniques—edge enhancement and halftone enhancement. The former produces smoother curves and lines while the latter increases the number of gray shades available. A printer may support one enhancement technique without the

other. Neither method replaces traditional imagesetters and offset printing for the highest quality printing. Toner spatter on laser printers and bleeding on ink jets continues to place a practical limit on sharpness and clarity.

The documentation is somewhat ambiguous regarding the enhancement techniques used, but according to Lexmark technical support, resolution enhancement affects only the halftone dithering patterns.

While halftone enhancement on a desktop printer can't compete with imagesetter output used for offset printing, most corporate color printing is limited to a few copies produced directly on a printer. A typical application might be color transparencies for a business or training presentation. The broader color palette available through Lexmark's halftone enhancement (called ColorGrade) can be a valuable asset to presentations.

ColorGrade is optimized for color enhancement rather than general resolution enhancement. Thus, high-contrast edges along lines and type do not show any improvement and are comparable to those produced by a 300 dpi laser printer. A close inspection of the ink jet output will reveal additional roughness when compared side-by-side with laser printer



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output. This roughness can be attributed to several factors that affect the ink as it is sprayed onto the page, such as slight variations in droplet size and bleeding or spread as the ink dries on the paper.

You can gain some control over the ink application through settings on the front-panel menu. Two separate selections control the print quality for the media type (e.g., transparency, plain paper or coated paper). However, this extra bit of control also increases the likelihood of an inadvertent error. If you are using coated paper, image quality will not suffer unduly from an improper setting, but print times will increase. If Lexmark could provide these settings through the print driver (on the computer) rather than through the front panel on the printer, adjustments would be much more convenient and perhaps less error prone.

Memory

The Jetprinter ships with 4MB of RAM. A standard bitmap representation of a four-color, 8.5x11 inch page would normally require about 6MB of RAM. To resolve this problem, the printer compresses the rasterized image (much as archiving and disk compression utilities reduce file sizes). Lexmark claims a 3-to-1 compression ratio for the Jetprinter. That leaves room for improvement when you consider the memory requirements for a full 11x17 inch

page at 360 dpi resolution. On-board memory can be expanded to 16MB if the base memory configuration is not sufficient.

You can overflow the base 4MB buffer on 8.5x11 paper if the image is complex enough. Buffer overflow should not be a problem if most of your output is limited to graphs, charts and simple illustrations. But if you will be printing scanned photographs that cover most of the page, you should add memory to the system. The Jetprinter has two SIMM slots that accept 8-bit 4MB or 8MB modules.

Image Quality

The Jetprinter does a very good job of rendering subtle color differences. For example, even on a dark violet the addition of 5 percent black can make a noticeable difference. Of course, you can't compare offset printed halftones with laser or ink-jet printed halftones. Light halftones on a desktop printer will always print more heavily than similar output on an offset press, but this is to be expected since the halftone cell is not as fine. Likewise, colors will not be true, but the output is nonetheless useful as a general guide for proofing.

As with most page printers, the printed image cannot cover the entire surface of the page. The unprintable margins at the top and

Life After DOS:

Examining OS/2 2.1, Windows 3.1

A strategic overview for managers trying to make the operating system decision.

Some experts think OS/2 2.0 and Windows NT will replace DOS in the near future. Others aren't so sure. One thing is certain: making the decision about when and how to upgrade won't be easy. Many firms are now considering OS/2, Windows and NT seriously. What about your company?

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If you have already made the operating decision, you may be interested in our **Using OS/2 2.0** seminar. Call for details.

HARD DRIVE

sides measure approximately .13 inch and the bottom margin measures .38 inch (the specifications list a .26 inch bottom margin and a suggested margin of .5 inch).

Performance

A graphics printer's performance is highly dependent upon the type of output produced. Text, simple drawings and graphs require only a few thousand bytes of data. However, photographic-quality color images may consume several megabytes of storage. As the data transfer size increases, you will see a similar increase in the transfer and rasterization times. The speed of an ink-jet printer is further affected by the printer mode and paper selection. For example, draft-quality output prints faster but reduces image quality. For testing purposes, I set the printer for coated paper in quality mode (as opposed to draft- or high-quality mode). This setting should provide the best trade-off between speed and quality for most users.

The Jetprinter printed a simple eight page PostScript printout (single spaced, with several font changes) in 15:23 minutes, yielding a text throughput of .52 ppm (pages per minute). Draft quality is nearly twice as fast and showed little degradation in font quality.

The Jetprinter is not really designed for text output—pages print in reverse order, supplies are relatively expensive and the speed simply is not competitive with laser printers.

When it comes to graphics printing, data transfer times and rasterization become much more important. The graphics test included two 256-color GIF images covering 68 square inches (or 72 percent) of a letter-sized page. The PostScript file for this used 3.7MB of storage and printed in 13:30 minutes. Thirteen minutes may seem very slow, but considering the image complexity and transfer size the performance is quite respectable. In comparison, a simple Lotus 1-2-3 bar graph printed in 1:44 minute.

Summary

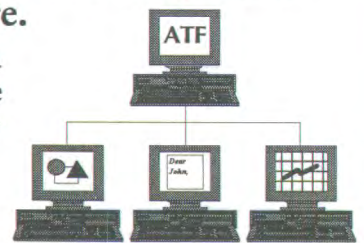
The IBM Color Jetprinter represents a good balance of features in a color printer: price, software support and performance. Colors reproduce well on coated paper or ink-jet compatible transparencies. You can obtain color at a lower price if you are willing to forsake PostScript compatibility. But in the long run, PostScript should be better suited to graphical environments such as OS/2.

Bradley Klierwer is the Editor of OS/2 Professional.

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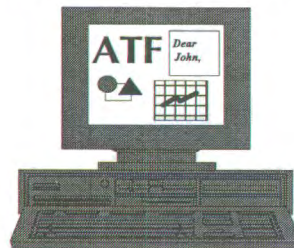
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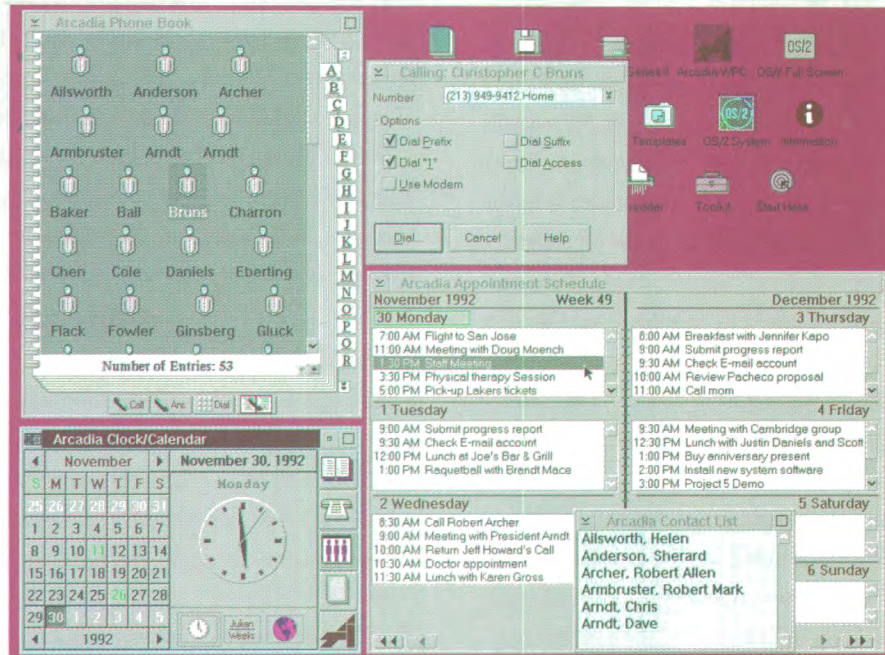


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THE LAW

Legislation and Regulation for the Information Age

BY TIMOTHY J. BURGER

NAFTA Focus

The North American Free Trade Agreement (NAFTA), which involves the United States, Canada and Mexico, is important as much because it could become a prototype for other international trade agreements as for any immediate effects expected from the accord. CBEMA communications director Maryann Karinch points to three important provisions included in the recently initialed document:

1) Copyright protection. CBEMA "got exactly what we want on that," said Karinch. That is, NAFTA "protects computer programs as 'literary works,'" the preferred protection of the computer industry, she explained.

2) Preferential Customs Rules of Origin. This is an exceedingly complex section of NAFTA which involves the tariff treatment of products, affecting them to different degrees depending on the percentage which is produced within the three NAFTA countries. Karinch explained that it essentially answers the question, "How much does it cost to take something across the border?" A mercifully short answer, she said, is that "the three nations involved give preference to items produced and sourced in their own nations."

3) Voluntary Private Sector Initiatives. This concerns companies' environmental responsibilities for plants abroad. Rather than mandating certain standards, the initialed NAFTA calls on American companies, for example, to work cooperatively and flexibly with the Canadian and Mexican equivalents to the U.S. Environmental Protection Agency (EPA) to reach environmental

standards appropriate to the location of a particular venture and in accordance with each country's needs.

Commerce Determines Dumping

The buzz in Washington isn't coming from President-elect Bill Clinton's most recent cup of McDonald's coffee—he drinks decaf, after all.

It's the sound of investigative activity at the Commerce Department, which recently made a "preliminary determination" that Goldstar Electron Co., Ltd.; Hyundai Electronics Co., Ltd.; Samsung Electronics Co., Ltd.; and several other Republic of Korea-based companies have been "dumping" dynamic random access memory semiconductors (DRAMs) in the U.S. "at less than fair value."

"We certainly feel that the dumping has negatively impacted pricing [for U.S. firms] and has caused severe injury to the U.S. industry," said Gilbert Kaplan, a senior partner at the Washington office of the law firm Hale and Dorr. Kaplan is representing Micron Technology, Inc., the Boise, Idaho, DRAM manufacturer whose complaint last April initiated the Commerce probe. He told *OS/2 Professional* that "the key factor" of the Korean firms' activity is the estimated dumping margin, or the margin by which the companies are artificially underselling U.S. manufacturers.

Commerce estimated this at 52 percent for Goldstar; 6 percent for Hyundai; 87 percent for Samsung; and 62 percent for the other Korean concerns.

As a result of the preliminary finding, the U.S. Customs Service "will require a cash deposit or bond equal to the esti-

mated weighted-average dumping margin on DRAMs from the Republic of Korea," according to a Commerce Department statement. Commerce is slated to make a final determination in March as to whether or not the dumping is indeed taking place. In the event of an "affirmative" finding, the International Trade Commission (ITC) would determine within 45 days "whether the imports materially injure, or threaten injury to, the U.S. industry."

If ITC decides U.S. manufacturers are being hurt, Commerce "will issue an order instructing the U.S. Customs Service to collect anti-dumping duties."

Competitiveness Studied

This isn't the only kettle brewing in the ITC kitchen. The agency is also busy with an investigation which it announced 10 days after the Nov. 3 general election in which it will assess U.S. competitiveness on the world market in three sectors of the high-tech industry, including computers.

Initiated as a result of a request last June by the Senate Finance Committee, the probe will comprise a "comprehensive study" of American competitiveness in the area of "semiconductor manufacturing and testing equipment," according to the ITC.

Since the Finance Committee's request was made in a letter signed by Treasury Secretary-designate Lloyd Bentsen, the investigation and its findings can be expected to be accorded some importance by the new administration.

The agency will "seek to examine all factors found by the Commission to be relevant to the global competitiveness of

THE LAW

the subject industries, including but not limited to, government policies, regulatory and trade impediments, and research and development financing and expenditures," according to a November 13 ITC order issued by ITC acting Secretary Paul Bardos.

The first public hearing in the probe will be held March 17 in Washington, D.C. Requests to appear at the public hearing—any interested party can testify—are due by March 3 and pre-hearing briefs (original and 14 copies) should be filed by the same time as requests to appear.

Bardos said written statements are also welcome "in lieu of or in addition to" appearances at the hearing. These will be due by July 28.

Virus Abuse Not Felonized

In the last-minute confusion which accompanied the 102nd Congress' self-

dismissal, it was mistakenly reported that S. 3349, which would have felonized "computer abuse," or the implantation of computer viruses, had passed both houses of Congress. Actually, it died in the House after passing the Senate on October 7, and thus didn't make it into public law.

As with so many pieces of legislation under the new Democratic administration, don't expect too much action on this until the 103rd Congress figures out where President-elect Clinton stands on this question.

On the Hill

The House and Senate are expected to recommence work early in the 103rd Congress on a "National Manufacturing Outreach Network," essentially a massive, on-line database which would allow computer and other high-tech manufacturers nationwide to keep current on

"standards, quality and technology developments."

The bill passed the House as H.R. 5231 last fall, but failed to make it through the Senate. House action was spearheaded by Rep. George Brown (D-Calif), the House Science, Space, and Technology Committee chairman, and Rep. Tim Valentine (D-NC), chairman of the technology and competitiveness subcommittee.

The concept is high on the agenda both for Congress and the Clinton-Gore administration, since vice-president Al Gore is a key ally. A House aide familiar with the situation said "it's expected that both houses will move it pretty quickly." ♦

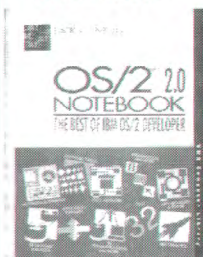
Tim Burger is a reporter for Roll Call, the twice-weekly "Newspaper of Capitol Hill."

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BOOKSTAX

Writing OS/2 2.0 Device Drivers in C

by Steve Mastrianni ♦ Van Nostrand Reinhold, \$29.95

REVIEWED BY ALAN JAY WEINER

Device drivers, the programs in your CONFIG.SYS file that control your computer's peripheral hardware, hold a mystical aspect for many programmers, as if they're something that mere mortals must not behold. Commonly believed to be difficult to write, most programmers shy away from them. This need not be the case. With good documentation, an understanding of how the system works and how it interacts with the device driver, writing a device driver is no more difficult than any other code. It's the fear of the unknown, y'see.

Writing OS/2 2.0 Device Drivers in C paves the way toward enlightenment and understanding. In spite of a somewhat unwieldy (although accurate) title, and a bit of unnecessary novice programmer's material in the beginning, it is chock full of the information you need to understand how device drivers work, and what is involved in writing them. There is a vast amount of new knowledge to pick up when working with device drivers, and Mastrianni guides you into it. He starts with an interesting review of the beginnings of the PC industry, and provides an introduction as to how and why device drivers have evolved.

He also presents an overview of the PC architecture, lightly touching on Micro Channel Architecture and Enhanced Industry Standard Architecture (EISA). Actually, there's a bit too much introductory material—including a description of such basic concepts as binary and hexadecimal numbering systems! Anyone who's attempting to work with device drivers should already have such basic computer knowledge. The thought of someone who isn't familiar with binary attempting to write a device driver... well, there are better ways to get a headache!

Still, it's better to have too much information than not enough. Although much of this material will be familiar to anyone who's written device drivers for OS/2 or other systems, it provides a nice review, and a foundation for those new to device drivers. The review section finishes with an overview of the OS/2 operating sys-

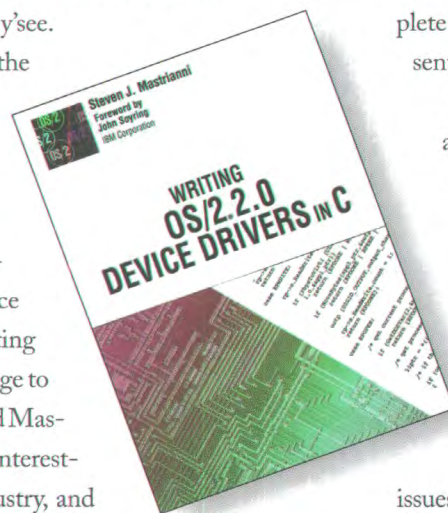
tem. Then comes the meat, with a breakdown of what goes into an OS/2 device driver. While technical, it's still readable and understandable.

Mastrianni begins the development sections by outlining a skeletal device driver with numerous code examples and explanations. Following this is a sample Physical Device Driver, (PDD). The sample PDD controls a conveyor belt: turning the motor on and off, and sensing switches. In constructing the complete PDD, Mastrianni builds upon the concepts presented earlier.

Device drivers usually need to know the bus architecture. ISA machines use switches or jumpers to configure hardware settings: interrupt levels, DMA channels or port addresses, for example. Micro Channel is more flexible, using a setup program to configure the system, saving the settings in nonvolatile RAM on the boards themselves. The device driver must know how to determine these settings. Mastrianni discusses

issues related to the Micro Channel bus. Further code examples demonstrate a combined ISA/Micro Channel initialization routine. Unfortunately, an equivalent section covering EISA issues is not included.

Virtual Device Drivers (VDDs), which are new for OS/2 2.0, are covered with descriptions on VDD architecture, Virtual DOS Machines, VDD-to-PDD communications and virtual DevHlp (device helper) services. VDDs are the magic that make DOS boxes work so well. DOS programs normally interact directly with hardware; the screen, serial ports and so forth. Naturally, if two programs attempt to use the same device simultaneously, chaos can result. Imagine two children trying to watch different shows on one television. OS/2 protects against this uncivilized behavior by intercepting the I/O requests and letting a VDD for that device determine what to do. It may permit the action (possibly assigning ownership of that device to that program), deny the I/O (if another program owns that device) or queue all the requests so that



BOOKSTAX

all programs can use that device. A brief description of each of the various standard virtual devices helps to explain the role that they play in a working system. To complete the coverage, Mastrianni presents a sample VDD which works with the sample PDD.

Mastrianni does not ignore the many other important areas related to device driver development: memory-mapped adapters, IOPL (Input/Output Privilege Level), DMA (Direct Memory Access), EDDI (Extended Device Driver Interface) and interrupt handlers. Although Mastrianni does not cover Presentation Manager drivers in detail, he does include an introduction to PM drivers.

The book includes a substantial amount of reference material. These chapters cover areas such as the request packets which OS/2 issues to the device driver, and the DevHlp services which are available to the device driver. Mastrianni includes numerous charts of useful information within this section.

If you've ever had trouble debugging a program, just wait until you try debugging a device driver! The device driver's close ties to the operating system are often problematic—if the driver doesn't work, the system may not come up. As Mastrianni explains, special tools such as the kernel debugger (KDB) are required. He briefly explains the use of these tools and includes a handy command reference to the KDB.

Writing OS/2 Device Drivers in C

by Steven J. Mastrianni
Van Nostrand Reinhold
New York, NY 10003
ISBN 0-442-01141-5
409 pages
Companion disk available for \$29.95
C Callable DevHlp Library and Toolkit available for \$79.00, or with complete source code for \$149.00

Pictures are said to be worth a thousand words. In the case of a device driver, program listings are the pictures. Appendix C includes 71 pages of listings. Although several of these listings repeat earlier examples, Mastrianni does provide several additional listings. These include the standard device driver include file, and parallel and serial port drivers.

If you don't like entering codes from a book, a companion diskette is available. The diskette includes the source, makefiles and documentation for all the examples. Or, you may order another set of utilities: the C callable DevHlp Library and Toolkit (which includes the companion diskette). Neither of these diskettes is required to use this book as an educational tool, nor as reference source. However, if you plan on writing device drivers using C

instead of Assembly Language, the Library and Toolkit will be necessary. While you could create the C-to-assembler interfaces for the DevHlp routines yourself, it would be quite time consuming. An example of one of the interface routines is included in the book—while it is short, there are a lot of DevHlp functions. Recreating the complete library would require a lot of typing!

Overall, this is a very helpful book. Mastrianni covers a wide range of material, and presents it in a more readable fashion than the IBM Device Driver Kit. The book is not as detailed as the DDK, which is a mixed blessing. While the DDK is thorough, it is frequently overwhelming. *Writing OS/2 2.0 Device Drivers in C* is useful as an introduction to writing device drivers, and provides a firm foundation for further digging into the DDK. It also provides great assistance to those who would rather write in C than in assembler. There are several issues, such as C startup code, and segment ordering, which need to be addressed when doing so; and Mastrianni provides good coverage of these topics. For anyone contemplating writing an OS/2 device driver, modifying an existing driver or simply desiring a greater understanding of how OS/2 interacts with device drivers and hardware devices, this book is well worth owning. ♦

Alan Weiner is a consulting engineer at Communica, Inc., located in Bourne, Massachusetts. He has been twiddling bits since the late 1960's, and writing system-level software since the days of the 8080.

Did you miss "Zero-Zero," the inaugural issue of OS/2 Professional?



Send your request along with \$7 to OS/2 Professional, 6129 Executive Blvd., Rockville, MD 20852, and we'll mail you a copy while supplies last.

SCOOPS

The "BORG" Arrives

OS/2 2.1, code named Borg, appears on track for a late March 1993 release, almost exactly one year after the March 30, 1992, release of OS/2 2.0. OS/2 2.1 went into wide beta with testers reporting a rash of Airborne Express packages received both Christmas and New Year's Eves.

Some of the features present in the beta release include support for Microsoft Windows 3.1 applications, seamless Windows and PM support for popular 256-color SVGA boards, a host of new SCSI-based CD-ROM drives, PCMCIA I/O devices, enhanced code for multimedia applications and support for OS/2 as an AS/400 client (with a PC Support program).

Beta testers report the current version to be stable. Notably, memory manage-

ment seems to be much better than under the October 1992 Service Pak. IBM reportedly is working on problems with UNDELETE, the spooler and mouse and keyboard problems after making Font and Color Palette changes. Beta users also report a variety of video corruption and refresh problems. Dated December 9, 1992, the 2.1 beta code is, at press time, already a month old, and many of the problems have already been fixed in internal betas used by the OS/2 development team. Users applauded the decision to do a wide beta of 2.1, and believe, as a consequence, the released version will be much better.

Of particular interest in this version is support for Windows programs that require Windows Enhanced mode. Programs that refused to run

under earlier versions of Win-OS/2, now run without hesitation. Win-OS/2 speed is now much faster than previous versions. Once slower than native Windows 3.1, users report that Win-OS/2 3.1 is as fast as the real thing—if not faster. Win-OS/2 also includes many of the Windows 3.1 accessories, including File Manager, Write, Paint Brush, Sound Recorder, Media Player and others. While none of the Windows 3.1 games are included, users report no problems in using the versions supplied with Windows 3.1 directly under Win-OS/2 3.1.

Beta testers also report that setup and installation of CD-ROM drives and SCSI interface cards are now much easier than before. The installation

screen is much clearer regarding CD-ROM support, and provides drivers for a diverse range of products from Hitachi, IBM, NEC, Panasonic, Sony, Texel, Toshiba, Adaptec, DPT and Future Domain.

The current beta program runs until February, and includes OS/2 2.1 beta, the Multimedia Presentation Manager/2 program, the Developer's Toolkit for OS/2 2.1 beta and a debug kernel. Interested parties can still obtain the 2.1 beta on CD-ROM for \$15 by calling (800) 3IBMOS2, (800) 342-6672.



You Can Do CUA

Ucandu Visual Programming, the first product to enable development of user interfaces that conform to CUA 91 using the REXX language, is slated for availability in March. CUA 91, the most recent version of the Common User Access guidelines, sets specifications for the Workplace

Shell look and feel.

Ucandu Visual Programming exploits OS/2 2.0 controls and business graphics and enables all REXX features, including interactive debugging, APPC and OS/2 Database manager interfaces. Users draw the user interface components of a program

using the visual programming editor. Using drag/drop, they can then link component actions to specific user interface events.

When a REXX programming project is completed, Ucandu Visual Programming generates a single .EXE program file. Users can run the

.EXE file license-free on any OS/2 2.0 system.

Ucandu Visual Programming will ship on a single diskette and require only OS/2 2.0 and a mouse. The introductory price will be \$299.

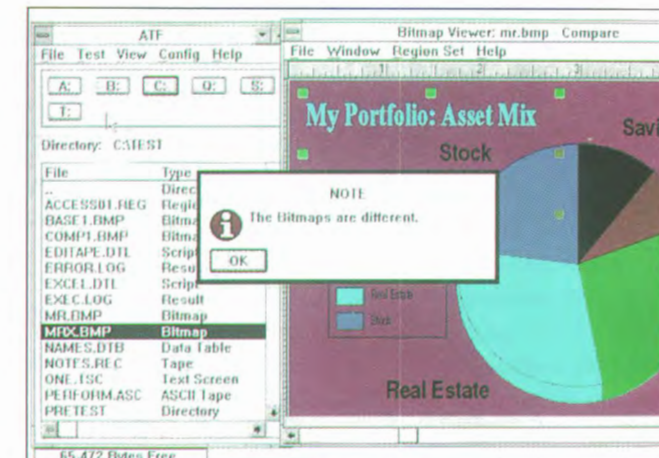
Ucandu Software, Inc., P.O. Box 255, Apex, NC 27502, (919) 387-9371.

New Products

Testing 1, 2, 3

The recently released Automated Test Facility (ATF) WorkStation from Softbridge, Inc., is designed for testing of stand-alone OS/2 Presentation Manager applications.

ATF WorkStation enables software testers to do types of testing not possible with traditional manual quality assurance methods. As Softbridge explains, the flexibility that makes graphical user interfaces appealing to users also makes them hard to test because of their non-procedural behavior. Also, the subtleties of mouse movements make it difficult for developers to pinpoint the location of a bug and identify its cause. ATF WorkStation features record-playback facilities



ties that capture keystrokes and mouse movements in fully editable tapes. When tapes are run, ATF restores underlying windows conditions and checks for meaningful changes in software.

ATF also offers a full programmatic approach designed

for testing windowed applications. The scripts built with ATF's easy-to-use programming language can interact with and get information about an application through window controls, as well as test the non-user-interface aspects of the application.

Once a test plan is codified in a set of test scripts, a full set of tests can be easily run at every stage of the development cycle.

ATF WorkStation offers text screen and window text file comparisons in addition to bitmap comparison.

ATF NetWorked, Softbridge's initial offering in the testing area, automates networked testing of both OS/2 and Windows applications. ATF WorkStation is fully compatible with ATF NetWorked.

ATF WorkStation is priced at \$4,800. It is available from Softbridge and resellers.

Softbridge, Inc., 125 Cambridge Park Dr., Cambridge, MA 02140, (617) 576-2257.

24-bit color for OS/2

Lava Computers has added OS/2 2.0 support (including seamless Windows under OS/2) to their Nova True Color Video adapter, bringing full 24-bit color support to the OS/2 desktop. Lava has taken a rather unique approach to graphics acceleration. Rather than following a traditional single chip implementation, the Nova True Color takes advantage of parallel processing.

The adapter uses three 8514/A compatible graphics coprocessors. Each coprocessor handles one of the three primary colors (red, green and blue) and 1MB of VRAM. According to Lava, this architecture gives the True Color a

significant performance advantage over competing 24-bit color adapters. The result: non-interlaced 1024x768 resolution, 16.8 million colors (without palette switching) and video performance that outpaces 256-color SuperVGA solutions.

The rich range of colors available through the 24-bit palette makes the Lava True Color video adapter suitable for photographic quality images. Applications range from color desktop publishing to multimedia presentations. The suggested list price is \$1,295.

Lava Computer Manufacturing, Inc., 28A Dansk Court, Rexdale, Ontario, Canada M9W 5V8, (416) 674-5942.

Six applications from CA

Six products from Computer Associates, now available for Microsoft Windows, will soon be available for OS/2 2.0. Customers who buy and register these products for Windows will receive a free version of the same software for OS/2 as it becomes available by the end of March.

The products are CA-REALIZER, CA-SuperProject, CA-dBFast, CA-Compete!, ACCPAC Simply Accounting and CA-Textor. CA-REALIZER is an integrated systems management program for managing a LAN server and connected workstations. CA-SuperProject is a

project and resource management tool. CA-dBFast is a graphical Xbase development language and database. CA-Compete! is a multidimensional spreadsheet and modeling system. ACCPAC Simply Accounting is an easy-to-use small business accounting software. CA-Textor is a professional-level word processor available in multiple languages.

Computer Associates International, Inc., One Computer Associates Plaza, Islandia, NY 11788-7000, (516) DIAL CAI, (516) 342-5224.

Symantec ships C++

Zortech C++ 3.1 for IBM OS/2 2.0 is a high-performance 32-bit native compiler

MARKETLINE

that delivers fast, professional C++ code for object-oriented application development. With this new OS/2 2.0 compiler from Symantec, software developers can produce state-of-the-art applications that take full advantage of the advanced capabilities of OS/2 2.0.

Zortech C++ offers full support for C++ and ANSI C. It conforms to the AT&T CFRONT 3.0 standards for C++, including support for precompiled headers, nested classes and templates. The Zortech linker generates both EXEs and DLLs.

Zortech C++ for OS/2 2.0 is designed to be used in conjunction with the IBM OS/2 2.0 Developer's Toolkit, the

IBM C Set/2 debugger and the IBM WorkFrame/2. Integration with WorkFrame/2 gives full access to all compiler and linker features from the Presentation Manager hosted environment as well as automated project management facilities.

For advanced numerical analysis, Zortech C++ provides support for the NCEG 91-015 numerical extensions and IEEE-754 floating point standards.

Zortech C++ comes with a set of libraries including ANSI standard libraries and C++ Tools, a class library for handling data types such as lists, hash tables and arrays. Multithread support, double byte character support and complete source code are included.

Zortech C++ for OS/2 2.0 is available for \$499 for new users and \$249 for registered users of Zortech C++. It can be purchased through Symantec resellers or direct from Symantec.

Symantec Corporation, 10201 Torre Ave., Cupertino, CA 95014-2132, (800) 441-7234 or (408) 252-3570.

New utilities from Oberon

Oberon Software has announced the release of OS/2 2.0 32-bit versions of its desktop tools DiskStat and LstPM.

DiskStat monitors hard disk free space and swapper file activity and provides a dynamically updated display of usage information. Current and historical statistics are displayed.

LstPM is a general purpose file browser. The new version includes expanded support for drag and drop operations, popup context menus, and font handling. Use of the OS/2 32-bit base API enhances LstPM's speed and large-file handling capabilities.

Demonstration copies of both programs may be downloaded from Oberon's BBS at (507) 388-1154 and other on-line information services, including CompuServe and GENIE. The demos are freely available for personal use. For corporate and institutional licenses, contact Oberon Software.

Oberon Software, 518 Blue Earth St., Mankato, MN 56001-2142, (507) 388-7001.

News

IBM and Caseworks equity pact

IBM has acquired 22.6 percent of Caseworks, the Atlanta-based firm that develops and markets tools that provide design and code generation for the Graphical User Interface (GUI) component of applications for OS/2. As such, IBM has essentially selected Caseworks as the recommended way to develop OS/2 GUI applications standard languages, according to Caseworks. The firm asserts that the agreement completes IBM's strategy of positioning tools for each philosophy of development (Easel for 4GL, Smalltalk for Object Oriented and now CASE:PM VIP for 3GL and C++ development).

One of the key reasons for

IBM's investment in Caseworks is Caseworks' underlying technology, called KASE (Knowledge Assisted Software Engineering). Caseworks has recently received a software patent on its KASE technology.

Future Domain/Corel SCSI alliance

Corel and Future Domain have agreed to an alliance for marketing Corel's SCSI software and Future Domain's family of SCSI host adapters.

The Corel SCSI software package will now include support for Future Domain Corp. SCSI host adapters, and Future Domain's host adapter packages will include Corel's SCSI kits. The combined packages allow the transparent integration of major SCSI peripherals to OS/2, DOS and

Windows systems and Novell NetWare file servers. Corel SCSI allows integration of up to seven peripherals off a single host adapter.

The new Future Domain packages that include Corel SCSI will start shipping in February with DOS and Windows support. Support for OS/2 and NetWare 386 file servers is scheduled for March.

Training courses for WPS and SOM

Descriptor Systems is offering a training course for OS/2 2.0 Workplace Shell programmers. The course is designed for software companies that are converting their OS/2 1.x products to OS/2 2.0.

The five-day course includes lecture and hands-on lab exercises. Topics include

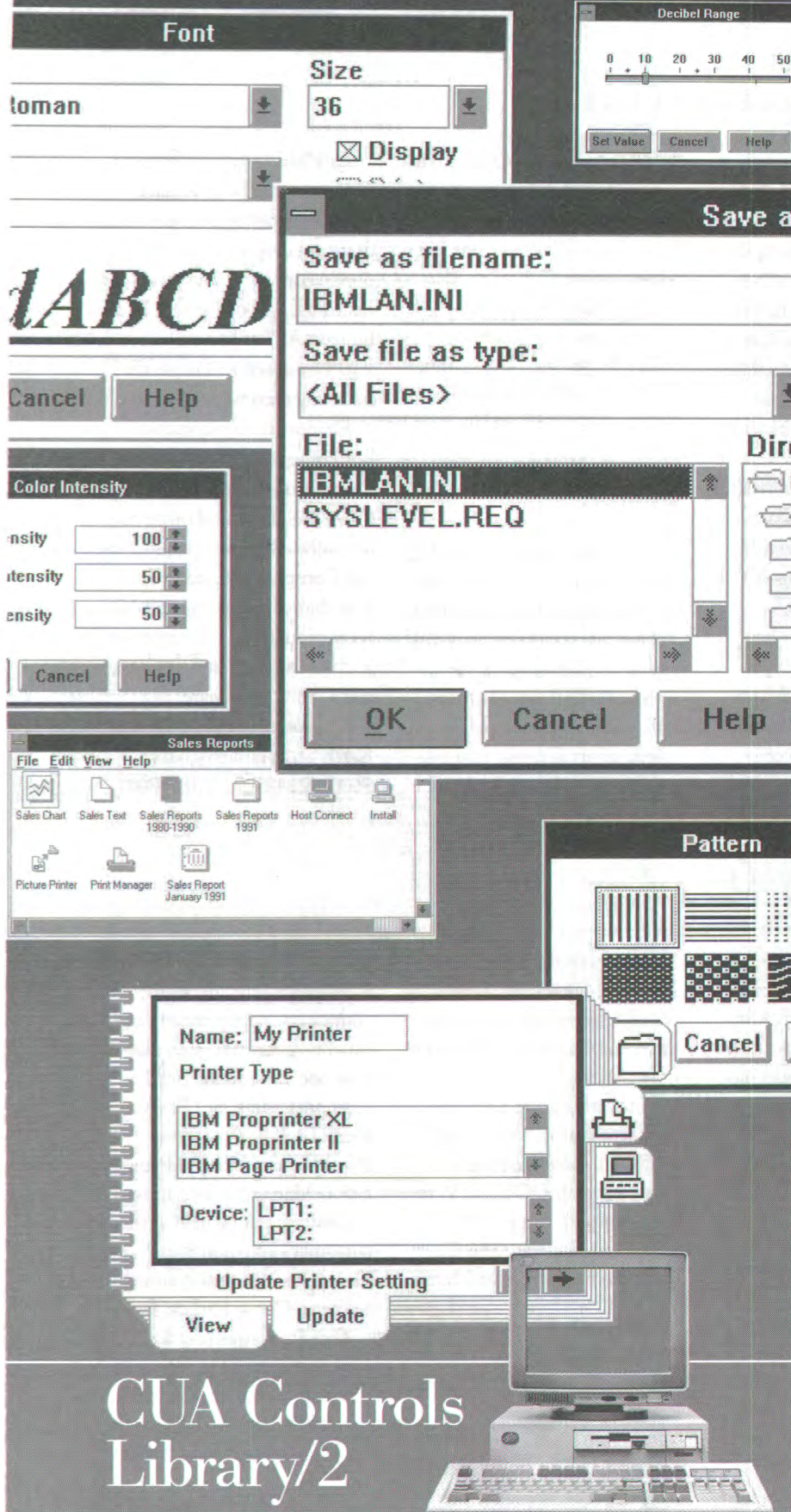
System Object Model (SOM), Workplace class hierarchy, containers, popup menus and notebook controls. Lab exercises use the IBM C Set/2 Compiler and OS/2 Programmer's Toolkit. Attendees should be experienced Presentation Manager programmers.

Courses can be held at the customer's site or at the Descriptor Systems' training center in Cedar Rapids, Iowa.

On-site classes cost \$10,000 with a limit of 24 students. For classes in Cedar Rapids, the cost is \$500 per student for the five-day class (\$750 after May 1, 1993).

In addition to Workplace Shell programming, Descriptor Systems offers Presentation Manager and OS/2 Kernel programming. ♦

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CUA Controls
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TNT

TIPS AND TECHNIQUES

BY GORDON SCOTT

Imagine you bought a car because it had a great engine and standard features. Wouldn't it be a nice surprise to find that the car not only had a great engine, but was loaded with useful extras? Best of all, wouldn't it be nice if your dealer decided to include those extras at no extra price?

OS/2 users experience this surprise when they begin to play with the programs in the Productivity folder. To be sure, you can find a better spreadsheet and a database than the ones provided in the folder, but these programs (often referred to as applets) are surprisingly useful tools. Browsing through the programs in the Productivity folder is time well spent. Here are eight tips and techniques you can use to get started with some of them.

Streamlining file searches.

Set the Seek and Scan Files program to prompt you for a filename.

How to do it:

- Display the **Program** page of the settings notebook by opening the settings for the Seek and Scan Files program.
- In the Parameters field, type a left brace, then a space, then a right brace, like this: [].

What this buys you: Efficiency.

When you add the braces to the Parameters field of any program, OS/2 will display an entry field before it executes the program. The entry field allows you to specify a parameter for starting the program.

The Seek and Scan files program will use what you have typed in the entry field

as a filename. Seek and Scan files program works with wildcard characters (asterisks), so you can think of it as a high-powered DIR command that works on more than just one directory.

Seek and Scan Files is great for locating a file. It can do more than just search for files, but you'll rarely use it for anything other than that. Most of the time, if you start this program, you are going to be searching for a file. By prompting for the file name, you streamline this task since the program starts up with the search already underway.

Automating tasks in the Enhanced Editor.

Record keystrokes for immediate playback.

How to do it:

- Press Ctrl-R to start recording your keystrokes.
- Type the task you want to repeat.
- Press Ctrl-R again to stop recording keystrokes.
- Press Ctrl-T to replay the keystrokes.

What this buys you: Time.

Some simple tasks, such as changing the indentation or comment styles in programs that you have written, can be such a bother that you avoid doing them altogether. When a large file requires repetitious changes, the task can be particularly daunting. By automating tasks with this simple keystroke playback you can make such changes quickly.

Retrieve files from a host system and edit them with the Enhanced Editor.

If you have OS/2 Extended Services

installed, you can open and edit files from a VM host system to which you may be connected.

How to do it:

- Select the **Open** menu option from EPM's File pull-down menu.
- When a dialog box appears, Enter HA: and then a valid file name (including extensions).

For example, suppose you are connected to a mainframe computer that runs the VM operating system and you want to edit a file on your system by the name of DOCUMENT SCRIPT. To edit this file, you would type the following in the entry field when prompted, HA:DOCUMENT SCRIPT A and then select the **Open** push button. The Enhanced Editor retrieves that file from your host system and allows you to make changes to it. When you are finished, it will save the file in the place you retrieved it from originally.

What this buys you: Efficiency.

If you use OS/2 in a corporate environment, chances are you're connected to a host system of some kind—perhaps VM. OS/2 excels in this environment and the Enhanced Editor is just one example why. If you are connected by OS/2 Extended Services to a VM host system, the Enhanced Editor is capable of working with the files on that host system in the same way as if those files were on your own hard drive.

Working with several text files in the same editing session.

The Enhanced Editor allows you to establish a "ring" of files. The way the

TIPS AND TECHNIQUES

ring works is that, although you only see one file at a time, all files are in the same window. By pressing F12 to cycle through the files, all can be edited in the same session.

How to do it:

- Select the **Preferences** option on the **Options** pull-down menu.
- Select **Ring Enabled** on the cascaded menu.

Two buttons with circular arrows may appear on the title bar near the minimize button.

What this buys you: Efficiency when working with text files.

If you need to make a lot of similar changes to text in two or more files, you could benefit by having all of these files in a ring. Particularly if your repetitive tasks can be handled by the keystroke recording feature of the Enhanced Editor. If you want to use recorded keystrokes to fix text in multiple files, you can put all of the files in the ring and use the recorded keystrokes in each of them. This is helpful since you cannot apply recorded keystrokes from one file to another file in a different window.

Additional note about the Enhanced Editor.

The Enhanced Editor is not really a word processor, even though sometimes it acts like one. Instead, it's a highly customizable and programmable text editor. Looking at the Enhanced Editor's Quick Reference online help in sections 7 and 10, you'll find information for writing high-powered macros with this Editor's own internal macro language, or by using REXX, the interpretive command language that comes with OS/2. Don't be fooled by this program's slow

start time and unremarkable interface. In the hands of even a weekend programmer, it can be a powerful tool.

Getting a daily reminder from the Calendar program.

You can automatically display the day's, the week's or even the month's appointments whenever you start your computer.

How to do it:

Place a shadow of the Daily Calendar from the Productivity folder in your Startup folder. You can also do the same with any of the other calendar applications. If you prefer to see the month-at-a-glance view every day, for example, you can put a shadow of the Monthly Calendar application in your startup folder.

What this buys you: A good reminder system.

Looking at your day's activities has never been easier. Placing a calendar application in your startup folder displays the schedule for the current day and leaves it on your desktop until you minimize or close it. That way you are automatically reminded to check your schedule when you start your computer. This technique makes a productive habit—keeping an online calendar—even more productive.

Creating icons for your custom batch files.

You can distinguish one simple batch file from another by giving each one a distinctive icon. **Any** icon can be modified by using the Icon Editor in the Productivity folder. But you won't want to start the Icon Editor directly from the Productivity folder, at least not for updating a single icon.

How to do it:

- Open the settings notebook for the command file or batch file of your choice.
- Select the tab for the **General** page.
- Select the **Edit** push button. (This actually starts the Icon Editor found in the Productivity folder.)
- Modify the icon to make it unique.
- Save the icon without changing its name.

What this buys you: Quick identification of specialized icons.

If you have several batch files that you use only occasionally, it will be helpful for you to have a way of identifying them quickly. Creating a custom icon for each batch file will help you recall quickly what each one does, even if you haven't used it recently.

Monitoring your system's workload continuously.

The Pulse program displays a running graph of the system's performance. You can set this program to display continuously, without taking up a lot of your desktop space.

How to do it:

- Open the settings notebook for the Pulse program. In the Parameters entry field, type NOICON. On the **Window** page, select the **Minimize to desktop** radio button. Start the program, then minimize it.

What this buys you: A compact feedback mechanism for observing the system's status.

The Pulse program is not very important if your machine works properly most of the time. But if you have just installed a new program, especially a beta version of some new software, your system will likely behave unexpectedly at some point. At such times, the real-time feedback that the PULSE program

TIPS AND TECHNIQUES

provides can be very helpful.

By minimizing this program's size on the desktop, you can afford to have it running continuously during testing situations. That's important since you never can tell when you're going to want it around.

BONUS TIP:
**Printing the online help
for a program.**

This next tip discusses how to print the online documentation. The online help facility of OS/2 is not one of the programs in the productivity folder, but each of those programs has online information useful for learning to use it.

How to do it:

To print a panel you find useful, select the

Print push button on the Help window. A dialog box pops up, press the **Print** push button on this window also. The information will be sent to your system's default printer.

To print more than one panel at a time, follow these steps:

- From the Help window select **Contents** from the **Options** pull-down menu.
- In the Contents, highlight a panel you want to print.
- Press the spacebar to "mark" the panel name. (The panel name will remain highlighted.)
- Highlight and mark all other panels you want to print
- Select the **Print** push button
- On the Print dialog box, select the radio button for **Marked sections**.
- Select **Print**

All of the sections marked in the Contents window will be printed out on your sys-

tem's default printer.

What this buys you:
Transportable information.

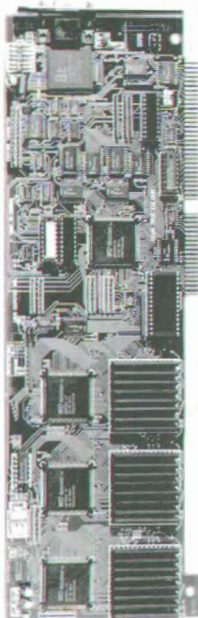
OS/2 has lots of online information. Some users may prefer to read documentation in a form that doesn't require them to stare at the small screen. Since online help can be printed, or even pasted to a file, an OS/2 user can learn more about OS/2's standard features even when not sitting in front of the computer. ♦

.....
Send your questions, ideas and/or comments for OS/2 Tips and Techniques to OS/2 Professional, 6129 Executive Blvd., Rockville MD 20852, or via MCI Mail to os2pro, or fax them to (301) 770-7062. We regret we cannot accept phone calls on the subject.

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Above: The quiet elegance of Park Hyatt Washington's lobby. Right: The historic refurbished "Conrad Hilton," now the Chicago Hilton Towers.

Favorite

Three stars...four stars...five stars. Everyone has a personal rating system and it's really all a matter of need, priority and, of course, taste. Herewith are some personal favorites we return to time and again for their elegance and ambiance.



Business Hotels

BY EDWIN BLACK AND JUDITH A. RUBENSTEIN

Park Hyatt, Washington.

Imagine walking through a small but exquisite lobby, past Oriental artifacts and modern art as you make your way to the lounge. After being greeted and seated with enthusiasm by the maitre d', you find a comfortable sofa or table and sit back as a pianist, sometimes accompanied by a cabaret singer, makes the midnight shimmer with Streisandesque renditions from Broadway and points west. Senators, lobbyists, Pentagon generals, powerbrokers and even a few journalists will come and go, and each will feel special.

That's the magic and mystique of one of America's most extraordinary small hotels, the Park Hyatt. Manager Paul Limbert is unyielding in his determination to anticipate the needs for some of the world's most elite and discriminating travelers. Here he readily concedes the hotel's reputation for "never saying no." Catering to the captains of industry, foreign dignitaries, presidents, stars and a sultan or two, the Park Hyatt is accustomed to complying with any request: be it for exotic cuisine, an extra VCR in the room or perhaps just a special courier at six AM.

Its *haute cuisine* restaurant, Melrose, arguably one of the finest in the city, does carry an impressive menu. But Melrose is more appreciated for faithfully producing any meal requested by any diner—from Mongolian beef to steak Madeira, from couscous to kosher knishes, from blue corn enchiladas to chateaubriand. Twenty-four-hours notice is needed only occasionally.

Service is attuned not only to the guest who requires a lot of attention, but perhaps even more so to the guest who craves his privacy. Its 224 rooms, mostly suites, are among the most tastefully dressed in the Capital. The royal suite, notably frequented by the Sultan of Brunei (yes, that's right, the single richest man in the world), sports a fireplace, balconies, a fabulous living room dominated by a baby grand piano, several stereo centers equipped with TVs and VCRs, an elegant bar and writing den, a cushy bedroom and a dramatic jacuzzi.

Ironically, the Park Hyatt's subtle finery comes with a price tag only slightly more than most other downtown hotels and restau-

rants. For a remarkable experience, any visitor to Washington should visit the Park Hyatt. Or better, the Park Hyatt can become your reason for visiting Washington.

Park Hyatt, 1201 24th St., N.W., Washington, DC 20037, (202) 289-1234.

Chicago Hilton Hotel and Towers.

Elegant hotels are generally not convention hotels precisely because it's so hard to be intimate in a crowd of thousands. But the Hilton Hotel and Towers of Chicago is the exception.

Several years ago when politics prevented Hilton from building a new property, the company poured more than \$180 million into renovating its fabulous Conrad Hilton Hotel. Its rich history of hosting Chicago's best and worst, from its presidential visits to its riotous 1968 Democratic Convention, had been obscured by decades of neglect.

But a massive restoration and refurbishing brought back to life priceless murals and frescoes, a vast and enchanting lobby, and sleeping rooms that were once again fit for the most demanding traveler. Its 1,600 rooms are richly decorated with muted fabrics and cherrywood, Italian marble baths and rich brass fixtures and often a writing table and two telephones. Each seems exquisitely personalized.

For even greater privacy, the Hilton provides "The Towers," a small 228-room "hotel within the hotel" where guests are afforded an extra measure of pampering and prestige. Special concierges and lounges make the Towers more engaging and intimate than just another "club floor."

If you're in a mood to join the rest of the world, the Hilton's public dining areas will be quite rewarding. Kitty O'Sheas is a real Irish pub charmed by real Irish duos. And Buckingham's is the hotel grill embodying the tradition of great meats and chops from Chicago's once lively stockyards. For extraordinary rooftop private dining overlooking Chicago's magnificent lakefront, ask for a catered affair in the regal imperial suites.

Accommodations That Leave Room For Everything But Improvement

At Park Hyatt Washington, spacious suites and guest rooms provide generous amounts of comfort and luxury. You'll appreciate the luxurious marble bathrooms as well as the beautifully appointed living areas that make working, as well as entertaining, a pleasure. Every accommodation includes a fax machine, two phones with two phone lines, and a computer data port, all designed to make your stay at Park Hyatt Washington an enormous success.

For reservations, call 202-789-1234, 800-233-1234, 800-922-PARK, or your travel planner.



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Park Hyatt encompasses hotels managed or operated by two separate groups of companies—Hyatt Hotels Corporation and Hyatt International Corporation.

Circle #42

WANDERLUST

Chicago's Hilton is now one of Chicago's best, and a must for those bound for the Windy City.

Chicago Hilton Hotel and Towers, 720 South Michigan Ave., Chicago IL 60605, (312) 922-4400.

Four Seasons Hotel, Boston.

Special in every sense, this hotel, a recipient of AAA's prestigious Five Diamond Award and a member of Leading Hotels of The World, elevates service to an art by stressing time-honored Continental traditions. Step into the quietly elegant lobby, a tasteful blend of exquisite antiques and comfortable seating areas set off by magnificent carpets in complementary muted tones, and you immediately experience the renaissance of Boston's Old World charm.

Stroll through the spacious lobby to the base of the grand staircase and you will find the Bristol Lounge, a perfect meeting spot to enjoy lunch, afternoon tea, dinner or a late supper with friends or business associates. Intimate seating arrangements, many with a streetside view of the Public Garden, make this a choice location for a relaxing interlude in your busy schedule.

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For suburban style and practical business facilities look no further than **Holiday Inn Crowne Plaza – Rockville**. Just steps from a short Metro commute to Downtown, the Crowne Plaza provides all the accommodations necessary to satisfy the most demanding business needs.

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To relax after hours, there's a state-of-the-art health and racquetball club, an indoor/outdoor pool and an indoor putting green. Then for delicious dining, you can catch dinner at one of our two restaurants, Papa's Cafe or The Hideaway. For those who still want to play, the popular nostalgic dance club, Studebaker's, will shake, rattle and roll you into the late evening.

So, for suburban style and top-notch accommodations just minutes from Washington, look no further than...



For information and reservations call (800) 638-5963, or (301) 468-1100 Holiday Inn Crowne Plaza—Rockville, 1750 Rockville Pike, Rockville, Maryland 20852

Circle #43

WANDERLUST

The hotel's 288 guest rooms include parlor, executive, deluxe and presidential suites, as well as king and twin-bedded rooms. (For sheer indulgence, select a deluxe suite facing the seasonally changing Public Garden.) But whatever your choice, the hotel's services are sure to make you feel like a guest in an exclusive Beacon Hill residence. In addition to the expected amenities, the hotel provides three no-smoking floors, complimentary limousine service within downtown Boston, a sensational rooftop spa and swimming pool and an alternative cuisine menu (gourmet dishes low in calories, cholesterol and sodium).

Whether in town for business or recreation, travellers will especially appreciate the Four Season's thoughtful attention to small details: bottled water in every room, skirt hangers, refrigerated mini-bar, windows that open, 24-hour room service and concierge. And if you must mix business with pleasure, note that secretarial service and fax and copy machines are available.

The Four Seasons, 200 Boylston St., Boston, MA 02116, (617) 338-4400.

Embassy Suites New York City.

Believe it or not, this place is a godsend, offering spacious, secure, and economical suites in the heart of Times Square. The suites were built for executives, with plenty of workspace, a sharp design, large bathrooms, dataports in the phones for modem or fax transmission. Microwaves and a host of personal business machines can be requested.

But Embassy Suites has made it ideal for family's as well with a Kid's Club, offering Manhattan's only hotel child supervision. So you can take a break or attend to business, while children are having a ball.

The sumptuous free breakfasts Embassy Suites is known for plus their complimentary cocktail hour is all included. The staff is spic and span and ready for business. You'll find security in the hotel and omnipresent on the street outside. Frankly, this is our number one pick for convenience and quick trips into the city.

Embassy Suites New York City, 47th and 7th Ave., New York, NY 10030, (212) 719-1600.

The Nikko, Chicago.

One of the most distinguished hotels in America is the extraordinary Nikko, astride the Chicago River. World-class service and style are the hallmark of the Japanese-owned Nikko. Its lobbies are decorated with exquisite artworks and every corner has been made restful and comforting. The main Nikko lobby is a place to be pub-



Embassy Suites offers spacious work and personal areas, a rarity in New York City.



At the Nikko, the special Japanese suite offers a serene rock garden.

lic and private, depending upon the corner you select.

Every staffer acts like a concierge, treating every guest as an honored visitor—which they are at the Nikko. The real concierges will become your right-hand person while visiting. Expect them to take messages, make and break appointments, set and cancel reservations, find out the latest travel or entertainment information and, in general, try to accomplish the impossible.

The rooms are dignified and tasteful. If somehow you can get the company to spring for a Japanese-style suite—very expensive—you can expect to live in a spare, delicate suite decorated with a small but elegant rock garden overlooking the city. Shoes are not permitted, and floor futons are brought in and out of storage in an elaborate operation.

The restaurants—Japanese and Continental—are first class. Hint: the riverside dining room has some of the most tempting desserts you'll ever taste.

The Nikko, Chicago, 320 N. Dearborn, Chicago IL 60610, (312) 744-1900. ♦

INPUT

continued from page 45

I am the DP manager and we have an AS/400 with PS/2s attached via a token ring. I think we are one of the few small companies that are really putting OS/2 to the test.

I hope you can publish something about the PS/2, we need to get the word out about the benefits of Micro Channel.

Keep up the good work!

Ken Kubn

*Data Processing Manager, Clover
Stornetta Farms
Petuluma, CA*

I am a registered OS/2 2.0 user delighted to receive *OS/2 Professional* Volume 0, Number 0, and want to congratulate you on the magazine. I was thrilled in particular by the enthusiasm, optimism and knowledge shown in your Publisher's Memo and Edwin Black's Special Report, "The Future of OS/2."

Unfortunately I encounter a lot of frustration as well as a large lack of interest in OS/2 here in Houston. This in spite of vigorous promotion by the local IBM office.

Thank you once again for the magazine and your encouraging articles.

Robert Duncanson

*Editor, ABC Computer Gazette
Houston, TX*

Today I received and have completely read your first issue. Absolutely fantastic! I am excited to finally have my appetite for complete coverage of the OS/2 arena satisfied. OS/2 is wonderful, although the installation routines are somewhat pathetic. Since April 16, 1992, I have not crashed once! Tell that to Windows 3.x.

In your article "The Future of OS/2," the dismal statistic of less than 100,000 registered users shocked me. I know several people who have switched, with enough convincing, and love it. How can that number be so small? But you are right when you say that there are a lot more users than that.

Even though I am a developer and the ramifications for a preemptive multitasking environment are obvious, there is a far more valuable reason for me. Productivity! It is absolutely impossible to believe that I made it this long. When I can have a background OCR program running scanning several hundred pages, still do database work under FoxPro 2.0, play a quick game of Wing Commander, send or receive a fax, train a neural network, have instant access to my accounting and still be able to do monthly billings—all at the same time—is an incredible time saver. Plus, I really do not need two computers at my desk anymore. Now that I have my hi-res video drivers I can do layout too!

Meanwhile everyone squeals Windows NT. For a product that is supposed to explode in its first release and be reliable, isn't this just a little wishful? Microsoft does a good job, but nobody is that good. At least OS/2 has proven stability. It appears that OS/2 will also have greater compatibility, and, with the planned Mach 3.0 kernel, even greater flexibility. Hopefully IBM will be the David to the Goliath of Bill Gates.

Derek C. Anderson

*President, Performance Support Services
Lakewood, CO*

A word on Describe

Herb Tyson's upbeat article in the November '92 issue of your publication reviewing Describe 4.0 did a thorough job of surveying most of DeScribe's new features. However, since Mr. Tyson's article was based on a beta version of the software, the final release has even more to recommend it.

For example, DeScribe now has added keyboard functionality to the style palette, making it accessible without having to use the mouse. Yet an even easier method of applying stylesheets to text exists for anyone interested in shortcuts, and Mr. Tyson implicitly recognized it when he praised DeScribe's cus-

tomizability. He is right—users have "the ability to make any key do anything." By customizing DeScribe with a menu that includes shortcuts—keys that link macros to stylesheets—users can easily apply stylesheets with a single combination keystroke. Writers at DeScribe used this method and worked swiftly and effortlessly through thousands of pages of documentation that included a complex array of stylesheets.

We are puzzled at Mr. Tyson's comment concerning no "straightforward and automatic way to insert page-to-page cross references" and are not sure exactly what he means by this. But DeScribe does include cross referencing in its standout indexing feature which allows the user to insert cross references easily and automatically. Users need only type in the cross reference and select the index entry to make the link. DeScribe does the rest. We generated numerous indexes for lengthy documents with no problem.

However, we do concur with Mr. Tyson. DeScribe is "like no other word processor you've ever used," and we feel certain it will remain without peer for some time to come.

Cecey Royal

*Technical Writer, DeScribe, Inc.
Sacramento, CA*

Deliberate "error"

Your November 1992 issue of *OS/2 Professional* contains a serious typographical error. The issue identifies itself with the month, year, and Volume 0, Number 0 adjacent to the *OS/2 Professional* logo on the front cover.

Kevin J. Walsh

*Senior Marketing Analyst,
Siemens/Nixdorf Information Systems
Secaucus, NJ*

[Edwin Black replies: It was deliberate. But it nearly gave our printer a heart attack on press.] ♦

US/TOO

Gossip and Chip Talk

BY OSSIE SHTIYUM



he rising stars at IBM are not the blue suiters of tradition, but the adventurous act-today-and-get-permission-tomorrow guys. It's the cowboys not the bureaucrats who will save IBM from itself. We've spotted at least three of them and happened upon a few tidbits.

JOHN SOYRING, IBM's gung-ho director of OS/2 software development, is rumored to have "stripped" at the Team OS/2 Party at COMDEX. Well, he did take off his outer clothing to reveal a Team OS/2 T-shirt. But nothing more. What dedication! This guy's a real OS/2 cowboy. (He's from IBM's Austin, Texas, branch, after all.) He lassoes those important ISV's to write software for OS/2. With an aggressive fervor, Soyering's brought out thousands of programs for OS/2. And he never stops selling OS/2 to potential developers any chance he gets. Watch this guy. He's being groomed for IBM greatness.

Question? Does **DAVE WHITTLE**, the straight-talking evangelist for Team OS/2, have a business card yet? Answer: no. We hear it's because he's so versatile, the company hasn't assigned him anywhere permanently, so no one can authorize his cards! Right now, Whittle is operating out of an IBM facility in Gaithersburg, Maryland, near Washington, D.C. He doesn't even have a secretary. Another rising star, ironically, one of the most outspoken IBMers (and rumored to have leaked last year's famous John Akers memo).

And what about **TED SALAMONE**, director of the I.V. League. Salamone represents the maverick spirit that IBM needs to beat the tough competition of the '90s. Rumors that he's a bungee jumper are false—but only temporarily. Salamone's friends have been trying to get him to take the plunge for some time—and he's eager to do so. Although he toyed with leaping off the crane at the last fall COMDEX, it didn't happen. Recently Salamone was unable to meet buddies at San Francisco's Golden Gate Bridge for a leap of faith. When he's down to Earth, Salamone dabbles in quarter-mile race car driving. Salamone's doing a Herculean job helping books and other media get re-cognition and he has the guts to accomplish whatever he sets out to do.



CEOs leaning toward OS/2:

PHILIPPE KAHN, Borland: Gave the keynote at the recent OS/2 Developer's conference in New York.

Not only that, he gave the 1,000-plus audience of software developers each a copy of the programming tool, ObjectVision for OS/2. He writes and speaks about OS/2 whenever he gets a chance. If you missed it, *Washington Post Computer Showcase* featured Kahn on its inaugural cover playing a mean saxophone.

GORDON EUBANKS, Symantec: Was seen at the IBM ISV Party at COMDEX. Enthusiastic about OS/2, Eubanks just announced his latest entry into OS/2, Norton Commander.

PAUL ALLEN, Asymetrix: Was that Allen at that ISV Party? Either it was Allen (Microsoft co-founder), or his look-alike. Was he there because he loves OS/2—or for Microsoft?



By the wither. Any truth to the rumor that Microsoft is thinking of changing the name of Windows NT? (Hint: they probably got sick of the "Not There" jokes.) Bluff ware and market antics will soon be put to the test. The buzz around Washington, D.C., is that the Federal Trade Commission is about to mount quite an offensive against the Gates empire.

FLASH. Enter our "Rename Windows NT" contest. Fax your ideas, name, address and phone to: (516) 549-1129. The winner will receive a library of OS/2 books. (IBM employees and *OS/2 Professional* advertisers may not participate.)

From press liaison to marketing point man, that's the sudden transformation OS/2 media relations specialist **KEITH LINDENBURG** just underwent. Late last year, he was quietly swooped up by IBM marketing vice president **JOHN PATRICK** to be Patrick's eyes and ears on all OS/2 communications: advertising, marketing, promotion, press—you name it. Lindenburg's new title is "account manager," but don't underestimate his new pivotal position with an OS/2 power source.



peaking of eyes and ears—you would have to have been dumb and blind, or playing tidily winks in Redmond, to miss the IBM OS/2 Fiesta Bowl televised to millions on New Year's Day. Talk about a market statement! The megamillion dollar sponsorship for the titanic Syracuse-Colorado game was decided just a few months before at the height of IBM's new push for OS/2, according to sources. So rushed was the project, that IBM's agency didn't even have a television ad ready at the time. One hurriedly produced spot for OS/2 actually aired.

What the millions really bought was incredible name recognition. OS/2 logos were visible from every angle and in every camera shot: it was emblazoned every few yards on either side of the field, it was in the electronic video scoring, and it was even in small, almost imperceptible stickers, on the back of every player's helmet. Hell, some bloke even crudely pasted the letters IBM with masking tape across an orange background that kept floating across the camera's frame when the bench came into view. ♦

Whose Fault Is It?

Have you ever made a telephone call to a vendor for technical support and, after hanging up the phone, realized that the technician didn't have a single clue about what you were asking? Analyzing the source of a problem is often much more complicated than it appears.

Many problems are user problems. But let's face it. One of the biggest reasons is the overall poor quality of many computer manuals or online help. These manuals are often written by people who are too intimately involved with the product to clearly describe how to perform a particular task. As anyone who has ever called a vendor's technical support line knows, the customer should always be "right". If the user is unable to make the software function as expected, the fault lies with the application provider.

Sometimes, though, it is not the application at all, but a lack of familiarity with the operating environment. Tasks which are simple for an experienced OS/2 user may be more difficult or confusing for the new OS/2 user.

But user problems are only a small piece of the picture. As applications and users become more sophisticated, users demand more functionality in their applications. Developing applications is already a difficult proposition. Thousands of hours go into designing a product, and then it's up to the software engineers to implement. The engineers are only human and, they can—and do—make mistakes. While they may try to detect these errors through extensive beta test programs, the bottom line remains the same. There isn't a single application available that doesn't have at least one semi-serious problem.

So the application has problems. Now what? Reproducing the user's problem is the first step. Once the problem can be reproduced, programmers must then isolate it to a specific area of application code. Sometimes reproducing the problem with an application debugging tool shows the real cause of the problem. Usually, it is poorly written or an inadequately tested code.

But sometimes the application code is correct and it is really a change in the operating system causing a problem. For example, how many new problems have magically appeared in your application after installing the OS/2 2.0 Service Pak? Some are as simple as the text no longer fitting properly into the dialog box because IBM changed the default OS/2 font to be ISO compliant.

To an application developer, it's frustrating. The application behavior has been adversely affected by updates to OS/2. Things

that used to work, don't anymore. In these cases, it's very easy to jump to an often wrong conclusion that the OS/2 maintenance code has broken something.

However, consider another possibility: the application code has always been incorrect, and the operating system maintenance code has just "closed a loophole." For several applications, this is exactly what occurred during the move from OS/2 1.3 to 2.0. The application code was incorrect, but OS/2 was not issuing a failure return code. IBM corrected this defect in 2.0, and applications suddenly started reporting errors that never existed before.

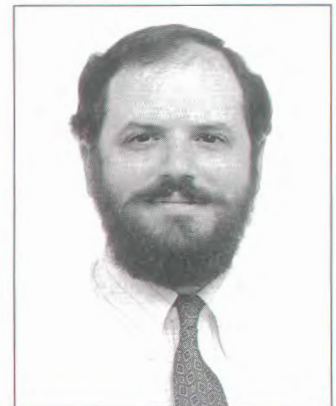
In other cases, the operating system code may break existing applications. This is not surprising in any operating system as complex as OS/2. There are too many interdependencies between the various components not to expose an occasional error.

Now what about a problem with the user's hardware configuration? DOS was very forgiving in this area. Unfortunately, OS/2 is not. The performance of OS/2 is very closely related to the proper hardware operation. IBM worked hard to produce a version of OS/2 that will run on most computers, but they are still struggling with the fact that users run OS/2 on every imaginable combination of components from multiple vendors. There's no way that IBM can test for all possible combinations.

Clearly, there are going to be problems at all of these levels as OS/2 continues to evolve. Even though IBM has made great progress, we all need to work together to get through the growing pains. While this can be very frustrating for users, it is also frustrating for application developers, device driver developers, hardware manufacturers and the IBM OS/2 development team.

OS/2 continues to offer exceptional opportunities for everyone. This isn't going to continue unless we work through some of the problems plaguing OS/2 today. We're all in this partnership together. Rather than pointing fingers at an application, a hardware component or an operating system, let's all work toward the common goal and get these problems resolved! ♦

Larry Finkelstein
President,
Creative Systems Programming
Corporation



Changing Windows™ Applications into OS/2® Applications Is

A Neat Trick Done With Mirrors

Micrografx Mirrors can help you work magic. You can reach over a million new users for the price of an inexpensive tool kit. With Mirrors, you can maintain an application for two operating systems with a single set of source. This means you aren't forced to choose between operating systems, and you won't get bogged down in version control problems and divided development efforts.

Get the advantages of OS/2: access to true a multi-tasking operating system, 32-bit architecture, a more stable platform, integration with other OS/2 applications, and a clear migration path — not to mention the advantage of a million new customers.

How does it work? It's simple.

Mirrors emulates Windows. When your application, running under OS/2, calls a Windows function, Mirrors intercepts the call. Mirrors then implements it using functions within the OS/2 system DLLs. Mirrors transforms data returned by OS/2 and passes it back in a form that Windows applications understand. Your application may never know that it's not running under Windows.

What do you need to do to make this happen? First, run Micrografx's conversion utilities on your application's resources, then re-link with the

Mirrors DLL. That's it. Using Mirrors, you may not even need to recompile. Micrografx developed the Mirrors technology. That means this tool kit was written by Windows developers for Windows developers. Mirrors is fast and inexpensive. Look into it!



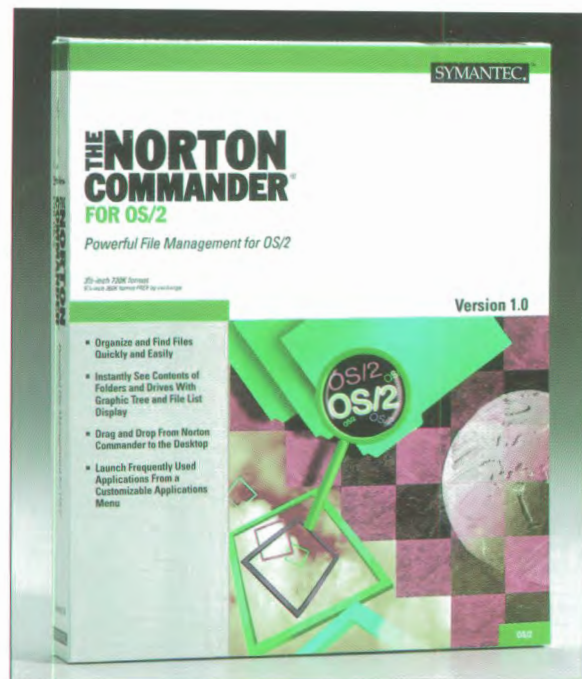
To Purchase your copy of Mirrors today, call (214) 994-6566.
To learn more about how this trick is done,
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- Mirrors is a 32-bit DLL for increased performance · 32-bit Mirrors DLL provides support for 16-bit applications
- Non-debug and debug version of Mirrors DLL provide handle validation and error reporting
- Automated conversion of Help, bitmaps, cursors, and icons · Includes DOS and OS/2 host independent file I/O libraries
- Interrupt 21 directly supported with no need to modify ASM files · DOS3CALL interrupt support
- Dynamic Data Exchange support with native PM applications · Mirrors also supports Clipboard data sharing

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Introducing the first graphical file management utility for OS/2 2.0

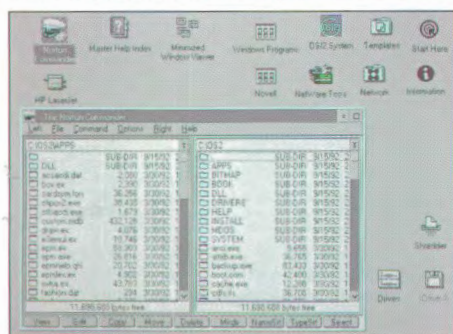


The Norton Commander for OS/2 provides the fastest and easiest way for OS/2 users to manage and manipulate both HPFS and FAT files graphically, right from the desktop. By simplifying all types of file management operations, and adding powerful new features, Norton Commander for OS/2 makes all levels of users more efficient and productive.

Integrated File Management

The Norton Commander for OS/2 integrates and streamlines OS/2 file management operations. Commands and functions like view, copy, move, rename, delete and change drive are integrated into a single window on the OS/2 desktop where they can easily be accessed with just a keystroke or mouse click.

With Norton Commander's graphical, side-by-side tree and file list display you can instantly see which files reside in each folder. Or display the contents of two folders simultaneously, and have Norton Commander compare them and



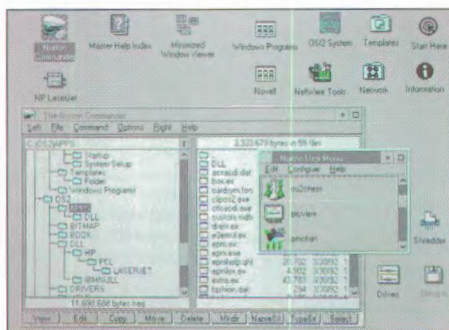
Easily compare the contents of multiple folders and drag and drop files between them or to the desktop.

highlight the differences for you. You can even drag and drop files and folders between Norton Commander panels or from a panel to the OS/2 desktop.

Organizing and managing your files has never been this easy!

Powerful File Finding

The Norton Commander can quickly search your entire hard disk to locate files or folders based on file name, extension even use OS/2 long file names or wild card characters in your search criteria! The found files are presented in a scrollable list, and with just a keystroke or mouse click you can launch the file, view the file, edit the file or go to the folder where the file resides.



Launch frequently used applications from a user customizable menu.

Command Line Interface

Execute DOS and OS/2 commands from a pop-up Command Line interface available from the Norton Commander for OS/2.

Applications Menu

The Norton Commander's customizable applications menu puts your frequently-used applications just a keystroke or mouse click away—without contributing to desktop clutter! You can easily add applications to a menu by simply dragging and dropping. Menus can even be centrally administered on a network.

With file management, applications menuing and additional powerful features, the Norton Commander for OS/2 is an indispensable utility for all OS/2 2.0 users!

1-800-628-4777

Extension AF72

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